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An Address.¹

By A. M. DAVIDSON,

President of the New South Wales Branch of the British Medical Association.

THE promotion of Dr. Kenneth Smith to be Principal Medical Officer of the Department of Repatriation will in the near future require him to make his headquarters in Melbourne. Otherwise he would have had the honour of addressing you on this occasion. His resignation as President-Elect was accepted by his colleagues on the Council of the Branch with great regret, and he will be much missed from our deliberations. His contributions to the debate were always highly valued, not only

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because of his profound knowledge of affairs medical, but because of his penetration and discernment, his ability to think clearly, to weigh accurately and to speak concisely. We congratulate him upon his appointment, but also congratulate the department upon obtaining such an efficient administrator.

Thus the privilege of occupying the presidential chair this year falls to my lot. I sincerely appreciate the honour conferred on me; and I crave your indulgence for such shortcomings as may be apparent, the time of preparation having been somewhat shortened.

First of all I must express our appreciation of the services of the retiring President, Dr. A. J. Collins. He has just completed a very strenuous year of office, fraught with some of the most serious difficulties any president has ever had to face. His patience, sagacity, tact and resolution have enabled him and the Branch to come through with every

¹ Read at the annual meeting of the New South Wales Branch of the British Medical Association, March 28, 1935.

reason for satisfaction. He could with justice take to himself the words of Hamlet:

The time is out of joint; O cursed spite
That ever I was born to set it right.

On such an occasion as this it is fitting that we turn our attention to the objects for which our Association came into existence, in order to satisfy ourselves that we are discharging our duty as well as may be and that we can give a satisfactory account of our stewardship.

Perusal of our Memorandum and Articles of Association clearly reveals the fact that the principal object in the minds of our founders was the promotion of the medical and allied sciences, and that such an object may be achieved by various ways which are suggested for our guidance. Foremost of these methods of promoting medical science is that of the regular general meetings of the Branch at which papers on medical subjects are read and discussed; then come the meetings of the various sections and our clinical meetings at hospitals. Occasionally the Council is able to arrange for some distinguished medical graduate from another State or from overseas to deliver a lecture or series of lectures, but unfortunately opportunities of putting this method into execution have been drastically reduced of recent years on account of shortage of funds. This is a matter of great regret to members of Council. Another very important means of advancing medical progress is the Permanent Post-Graduate Committee, an autonomous body brought into being by the Council and answerable to the Council, but administering its own affairs and funds. To those of us who have not the advantage of being present at general meetings *THE MEDICAL JOURNAL OF AUSTRALIA* conveys the papers read and a *résumé* of the discussion thereon, so that all may have knowledge of what is being done. I submit, therefore, that on these lines we may be permitted to feel that reasonable efforts are being made to put into effect the principal object of our Association.

There is one way of promoting medical knowledge and skill which we cannot put into effect without Government assistance, and that is the establishment of a hospital for post-graduate work; and although efforts have been made in this direction, so far they have been prevented by lack of unanimity in our own ranks and lack of sympathy on the part of the responsible authorities. It is hoped that fresh efforts may be made in the near future.

There are two of our subsidiary objects, both of importance, concerning which we cannot have quite the same feelings of satisfaction, namely, "the formation and maintenance of a medical library" and "the collection and circulation of statistical information". We certainly have the nucleus of a medical library, but so far the Branch has never been able to attempt the latter. For the proper and efficient performance of these two objects a suitable staff and considerable funds are needed, and, although we are very much indebted to those public-spirited members and to sections who are con-

tinually presenting books and periodicals to the library, there is definite need for a systematic and continuous programme of action if we are to create a medical library worthy of our great State and city. Without such a library this queen city of the southern hemisphere, this port of the largest city inhabited by whites in the British Empire, next after London, cannot become the medical centre of the Pacific Ocean, which surely should be our aim.

You will have noticed in the annual report with great satisfaction that British Medical Association House is at last entering upon a satisfactory financial state. It is hoped that the profits therefrom may be a means of developing such a medical library, and it seems nothing short of tragedy that taxation should take its toll of money intended for this object, directed as it is wholly to the public good. All of our members as individuals pay their taxes as required by law, and the vast majority of our members pay cheerfully and freely of that class of tax which is not enforceable at law but which is brought about by our feelings of humanity and charity—I refer to honorary attention to the poor and the workless, and to financial and voluntary support to hospitals and other charitable institutions. Furthermore, it is a principle of government that taxation should not be applied to money used for the pursuit of knowledge, especially such knowledge as is bound to improve the health and well-being of the people as a whole, and thus to render the nation more economically efficient. Is it not therefore an injustice that, as an association, we should be prevented from carrying out our legitimate objects by such encroachments? The vision of Hastings and of the founders of the British Medical Association, as well as that of our own past members of the Council of this Branch, who conceived the idea of British Medical Association House as an investment to help the advancement of our aims and ideals, as well as a home for our meetings and those of other kindred associations, is thus being made of no effect.

One of the most travelled and best known laymen in the British Empire, on the occasion of the centenary dinner of the British Medical Association, held in London in 1932, made some remarks of the greatest interest to members of our profession, upon the subject of the promotion of medical and allied sciences. I refer to His Royal Highness the Prince of Wales, who said:

I have always thought that the doctors are very human people and are strangely and zealously occupied in removing the occasions for their professional services. I know of no other profession that has this peculiar habit, and we all rather admire it, because we hope we can assume that some time or other there will be no need for their existence.

This puts the matter very simply and concisely, and I am sure we all feel grateful to His Royal Highness for these gracious words. There is no doubt of their truth, but I wish to point out very forcibly a further truth: that the march of medical progress has made life much more arduous and exacting for the practitioner in every branch of medical work.

In the first place the actual rate of progress in medical knowledge has become so much accelerated that regular reading of recent literature has become a much more pressing duty and necessity than ever before to the practitioner who does not wish to fall back in his methods. The cost of such literature is a drain upon the finances, and the time required for its perusal and application is very hard to find, pressed as one is by the demands of one's patients on the one hand and the necessity for recreation and rest on the other. The amount of literature to choose from at the present time is enormous, and it requires to be carefully selected so as to avoid waste of effort. This is the point at which a well furnished library, suitably staffed, would be of inestimable value to our members. This would apply with especial force to a circulating department of the library. At present THE MEDICAL JOURNAL OF AUSTRALIA renders valuable assistance in this regard by providing for the reviewing of published books and by having abstracts made of articles in current journals, thus enabling our readers to see for themselves where they may obtain accounts of any particular research work which may interest them. Our Branch in particular is doing valuable work in this regard, as the Editor informs me that of all those members of the Australian Branches engaged in abstracting current literature for the journal, work that is done without monetary reward, all but three are members of the New South Wales Branch.

The progress made in science generally, such as the internal combustion engine and its application to transport, the development of electricity in the direction of wireless broadcasting, the improvement in printing and newspapers and magazines, has enabled the general public to travel, to listen in, and to read, and so to acquire knowledge of what is being done in other parts of the world and in larger local centres, as well as to receive in their homes accounts, however crude and inaccurate, of recent scientific discoveries. The result is that when the man in the street enters the doctor's surgery he has already diagnosed his own case by suggestion and desires to know how our methods square with what he has been told by the lay Press and the wireless broadcaster. This alters the whole relationship as compared with the past, and leads to great wastage of time by the practitioner having to answer a series of questions, often irrelevant, always unnecessary.

The progress in medical science in particular has laid upon the conscience of the medical practitioner, no matter what his particular sphere of usefulness may be, a much heavier load of responsibility to see that everything has been done to insure the correctness of his diagnosis and the efficiency of his methods, whether of diagnosis or treatment.

Oliver Wendell Holmes, who was by no means a conservative in his day and generation, describes with his sparkling wit the patient's point of view in the early nineteenth century, in the "Stethoscope Song". He writes:

There was an old lady had long been sick
And what was the matter none did know;
Her pulse was slow though her tongue was quick;
To her this knowing youth must go.

So there the nice old lady sat
With phials and boxes all in a row;
She asked the young doctor what he was at,
To thump her and tumble her ruffles so.

I suggest that a similar patient of today would be most severe in her condemnation of the modern doctor if he did not thump her thoroughly after having seen that all ruffles and, indeed, all coverings had been removed; and then, after half an hour of careful history taking and physical examination, she would demand another half hour of argument as to the relative value of blood pressure readings on the one hand and starch in the diet on the other. There is no doubt in my mind that the trend of modern journalism and commercial broadcasting is to develop a tendency of neuroticism and introspection among that large class of our fellow citizens who, from one cause or another, do not enjoy quite the robust state of health that should be their lot. In fact, I have heard an experienced physician express the opinion that 90% of patients have their physical condition complicated by definite psychological morbidity. There is no branch of our profession which, in comparison with the state of affairs twenty-five years ago, does not suffer as regards the demands made upon our time, our patience, our endurance and our financial resources.

It is not practicable to discuss the bearing of this change in medical practice upon all branches of our profession in detail, but a few salient points will be touched upon.

In a general way the armamentarium of every practising medical man or woman has been considerably enlarged. A much greater sum of money is thus locked up in apparatus and instruments, and, in addition, the economic trends of the past twenty years have rendered all our impediments much more expensive. The best quality instruments purchasable in 1920 (speaking only of essentials) have on an average increased so much as to be double or treble that price today. Recent researches into infectivity of catgut have put a much heavier financial burden upon all who use it, by making it a duty to purchase only such products as comply with the requirements laid down by health authorities after exhaustive research by pathologists. The extraordinary developments in the chemistry of the barbiturates and other analgesic and narcotic drugs have made the lot of the anaesthetist and the obstetrician a much more arduous and time-devouring one, because our parturient patients demand painless labour and our surgical patients preliminary narcosis.

The difficulties under which trained and experienced specialists in clinical pathology labour at the present time are much more serious both for themselves and for the public good than those of any other branch of medical practice. The fact that pathologists with many years of experience in

well equipped hospital laboratories cannot obtain adequate remuneration, whether they remain on their hospital staff or start out for themselves in specialist practice, is a blemish upon our professional escutcheon which demands serious thought. Is this state of affairs due to apathy on the part of practitioners generally and sluggishness of our corporate conscience, or is it due to lack of sufficient authority and influence to convince the proper authorities that the profession will not tolerate a state of affairs which does not provide that efficient facilities for clinical pathology shall be available to every practitioner for all his patients? Does it not border upon the ridiculous that governmental authorities are prepared to spend large sums of money upon research into the causes of maternal mortality, while at the same time the Department of Health of this State, after having been advised upon the subject, knowingly starves the very departments of hospitals which could provide the trained workers to investigate this problem, and the facilities for the use of general practitioners when such cases come under their notice.

We have in this State, in the Infantile Paralysis Committee, a good example of what can be done in the matter, but this committee is not part of any recognized public authority; it is a private venture and a most worthy one. Can any economist or public servant attempt reasonably to estimate the ultimate benefit to the State, let alone to the individual, of a successful attempt to abort an attack of infantile paralysis? Is there any justification, ethical or civic or economic, for adopting the parsimonious attitude at present taken up by the Hospitals Commission of New South Wales? That the Hospitals Commission of New South Wales is responsible for this state of affairs is unfortunately true, as it is a most regrettable fact that at the present time practically every hospital board in New South Wales must continually plead with the Commission for its supply of money to carry on even its ordinary functions. Although it is well known that this matter has been brought under the notice of the Hospitals Commission repeatedly by those best able to know the needs, we have yet to learn that any hospital board has been disciplined for failing to provide adequate pathological facilities. On the other hand, we know that many hospital boards have been dealt with for much less grave sins of omission and have even been threatened with reduction of subsidy.

That treatment must be based upon diagnosis and that correct diagnosis can be insured in the more difficult cases only by the cooperation with the general practitioner of various specialists (among the most important of whom is the clinical pathologist) cast upon the members of our profession that important responsibility to see that in these days of drastic cutting down of expenditure the evil of employing the technician to do the work of the fully trained professional man in laboratories is

not allowed to obtain a footing. It is perfectly legitimate for a graduate in medicine to employ a technician, either in a pathological or in an X ray laboratory, to perform certain technical functions, but it is not the province of any such technician to venture an opinion upon diagnosis; and if this tendency is permitted to become established, disasters must ensue. Here again our corporate professional conscience must be obeyed and definite action taken.

We must be prepared to make allowance for the inability of the layman to appreciate the value of the pathologist, as his work is never spectacular, and most of it is carried on in the seclusion of the laboratory. The patient in a large number of cases never sees the pathologist who carries out the investigations, and even when the clinical pathologist does come into direct contact with the patient, it is usually for a brief moment to take a specimen; and he is not clothed with the authority and dignity of the consulting specialist in other branches. Thus it is clearly the duty of the profession, both individually and collectively, to see that the clinical pathologist receives his due in the matter of status and remuneration.

That the practice of medicine by the family doctor has grown more arduous and exacting with the march of progress is the consensus of opinion of all general practitioners of over fifteen years standing, and in addition to the general considerations mentioned before, there are some particular conditions which should be stressed.

The general practitioner of today has to do a great deal of clerical work not required in pre-war days. He has to keep detailed records for such purposes as pension inquiries and such as may be required in workers' compensation and third party risk and *Dangerous Drug Act* litigation. He is apt to be disturbed in the middle of the night by the police to determine whether some patient is under the influence of alcohol within the meaning of the *Traffic Act*. His monetary reward for obstetric cases is lower, but he is required by his professional conscience to give much greater service in the matter of prenatal care before labour and narcosis during labour. Then there is the great increase in the proportion of psychopathic patients who demand an expenditure of time for which they can offer no adequate recompense, and so on.

Another serious evil which is ever creeping into medical practice is that of outside influences coming between the patient and doctor. Insurance companies persistently endeavour to divert patients who may have been injured at work from the regular medical attendant to some clinic or individual medical man by means of pressure upon the employer in defiance of the spirit of the Act. Friendly society officers complain that we are too lenient and ask for reports. Well-intentioned employers frequently take a sick employee away from his general practitioner, without the courtesy of even a note, to some specialist of their own

choosing, and often in direct opposition to the wishes of the patient, deliberately keeping the original medical practitioner in ignorance and taking advantage of the natural diffidence of the patient to object, especially when not called upon to pay. Unfortunately in these circumstances the patient is placed at a disadvantage if he demurs to the wish of his employer.

That life in general practice is more exhausting than of yore would seem to be borne out by the number of men struck down in their prime while still actively engaged in practice, and it would seem that the words of Milton apply with special force to these colleagues of ours who have gone before:

Fame is the spur that the clear spirit doth raise
(That last infirmity of noble mind)
To scorn delights and live laborious days;
But the fair guerdon when we hope to find,
And think to burst out into sudden blaze,
Comes the blind Fury with abhorred shears,
And slits the thin spun life.

It may be pointed out that all these difficulties are very apparent and fully appreciated by our members, and that it is for the Council and officers of the Association to suggest means of ameliorating unsatisfactory conditions. It may be well asked: what may be done to rectify matters? How are we to regain lost ground, eradicate abuses and advance along the lines foreseen by our founder?

The answer is: by team work—cooperation. We must break down the divisions which come between us and remember that we are practitioners of the science and art of medicine first and specialists or general practitioners second. By team work I do not mean that any practitioner, whether specialist or general practitioner, should sink his individuality, nor do I mean any exclusive or binding arrangement between any number of medical men. A team need not be limited by any geographical boundary nor by any arbitrary numerical establishment, as on military lines. It should consist of one representative or more of each specialty supported by any number of general practitioners. The district hospital, as existing in suburban areas, is a very good nucleus of a team, with its consultant physician and surgeon, urologist, radiologist, ear, nose, throat and eye specialists *et cetera*; unfortunately the clinical pathologist is not represented in the majority of such institutions.

A splendid example of team work is provided by the recently established Medical Eye Service, which supplies a most important need to the public, while preserving the self-respect of those who attend for treatment or examination; and at the same time it allows full individual freedom on the part of its members and patients. Would that such a scheme were applicable to other branches of medical special service!

The weak point in our defences against encroachments and in our attack upon the problems that confront us is that we are, as individual medical practitioners, intensely individualist. This is not

of our seeking, but is thrust upon us by the nature of our work and of our relationship to our patients. The medical practitioner has to tackle his problems in the first instance single-handed, without the aid of colleagues, immediate decision and action being essential. Then again the attitude of patients is such as to foster individualism because of the intimacy of communication between doctor and patient and the freedom with which patients speak to their medical adviser of their most sacred private affairs. These factors and the claims they make upon his energy and time must tend to produce independence of thought and action on the part of the medical practitioner and at the same time militate against the spirit of cooperation which is so necessary to united and unanimous action of the profession in taking a lead in public questions and in the advancement of medical science.

It is sometimes charged against our Association that we require that every practising member must be cast in a single mould and practise according to definite rules. This is not so. We go no further than to demand that every practitioner of healing science shall have received adequate training in fundamental medical knowledge and shall then obey the dictates of his conscience.

The further charge is levelled against us that we do not give a lead in questions of public health to the extent we should; and it is just for such reasons, coupled with that diffidence of the wise to be dogmatic upon problems which may reasonably be open to difference of opinion as to method of attack, that spectacular leadership, so readily seen and applauded by the masses, is not possible. How true in medical matters is the old adage: "Fools rush in where angels fear to tread."

The process of putting medical knowledge into practical use in ordinary life is always originated by the patient who feels the need of it; the genuine medical practitioner does not seize upon his patient and proffer advice, but is sought out by the patient and offers advice only when asked for it. This fact is of importance in showing why it is that the medical profession is always backward in approaching those in authority to have some reform in public health instituted.

Rather is it the duty of those in authority to seek the advice and cooperation of such a body as your Council in all matters concerning public health and the practice of the healing art.

Disraeli said: "Individuals may form communities, but institutions alone can create a nation." So, in spite of our individualist tendencies, we have a duty as an association to the State and the nation; because it is the British Medical Association alone which can speak with authority in voicing a corporate opinion on behalf of the profession at large. For this reason it is of the utmost importance that every practitioner should keep in active touch with his local association, should attend as many general meetings as possible, and read his MEDICAL JOURNAL OF AUSTRALIA regularly. How can the Council be

expected to take any strong line of action upon any matter of public interest which affects us as a profession if those interested vitally will not avail themselves of opportunities for discussion?

I would therefore urge upon all members of the Branches the urgent necessity and duty of keeping before them the larger loyalty to the British Medical Association, however enthusiastic they may be for the advancement of their own special sphere of medical knowledge.

Of Sydenham, the English Hippocrates, it has been written:

Though diligent beyond most other children in gathering his pebbles and shells on the shore of the great deep and in winning for mankind some things of worth from the vast and formless infinite, he was not unconscious of the mighty presence beside which he was at work; he was not deaf to the strong music of that illimitable sea. He recognized in the midst of the known a greater, an infinite, a divine unknown; behind everything certain and distinct he beheld something shadowy and unsearchable, past all finding out; and he did not, as many men of his class have too often done and still do, rest in the mere contemplation and recognition of the *riθείον*. This was to him but the shadow of the supreme substance, *δθεός*. How unlike to this fervour, to this godly fear, is the hard, cool, nonchalant style of many of our modern men of science, each of whom is so intent on his own little pebble, so bent upon finding in it something no one else has ever found, so self-involved and self-sufficient, that his eyes and ears are alike shut to the splendours and the voices—the brooding darkness, and the "look that threatens the profane"—of the liberal sea, from out whose abyss it has been flung, and

"Which doth with its eternal motion make
A sound like thunder everlasting."

THE TREATMENT OF MAMMARY CANCER.

By H. M. MORAN,
Sydney.

It is unwise in medicine to base a thesis or argument on the statistical findings alone. The figures given in any comparison of results obtained by different methods of treatment are often valueless, first because a wide variety of different neoplasms are grouped under a common heading, and secondly because a decision as to the stage of the growth is subject to the variable personal equation. The term "mammary cancer" embraces a mixed bag of neoplasms, the prognoses of which vary as widely as the response to radiation. Nor must it be forgotten that for some breast cancers the natural duration without any treatment whatsoever may be as long as three, four or even five years. The Steinhthal or any method of classification can be of any value only in the hands of a single observer. There is no justification for the assumption that the tendency to distant spread bears a direct relation to the extent of the primary lesion. A small mobile medullary cancer of the breast is at times found to be associated with early and far-flung metastases. And how can the adenocarcinoma be compared with the scirrhou type of breast cancer in the results obtained either from operation or

from radiation? The key to prognosis in any cancer of the breast must be looked for in its behaviour in the particular patient, and our most important guides as to prognosis and treatment are to be found in the histological findings reviewed in the light of the clinical history. Imperfect as these guides sometimes reveal themselves, they are the best available. A rule of thumb method of treatment in breast cancer is as illogical as would be the routine adoption of amputation of the limb as the standard treatment for newgrowths of the long bones.

I propose therefore to lay down in somewhat dogmatic fashion the following axioms, which have crystallized from a personal experience in surgery and radiotherapy.

1. Knowledge of the histological nature of a breast tumour is essential for any decision as to the optimum treatment in a particular case. I believe biopsy in a non-ulcerating tumour to be attended with the risk of aggravation, but it can be made safe if preceded by effective irradiation. Frequently, however, a consideration of the clinical signs and of the history will supply an approximate indication of the pathological variety.

2. The anaplastic, rapidly growing mammary carcinoma should be considered as unsuitable for any surgical intervention whatsoever. This prohibition should be extended far beyond the acute "inflammatory" type of cancer and made to include all rather quickly growing medullary and scirrhou growths. A young woman with breast cancer should never be operated on without preliminary irradiation.

3. The adenocarcinoma of the breast can be reduced in size (no doubt from an effect on the local blood vessels), but is never cured by irradiation alone. It is essentially a cancer for the surgeon, and the results from surgery, even when the primary lesion is extensive, are very good, because this growth infiltrates slowly and metastasizes late.

4. The bleeding nipple should never be treated blindly by irradiation. It should be surgically investigated and surgically treated. The duct papilloma and the duct carcinoma both show good results from surgical operation. The duct carcinoma is moderately radio-sensitive until after it has infiltrated well beyond the ducts; therefore a plan of preliminary irradiation and operation is the procedure of choice.

5. A routine radiographic examination of the thorax should precede any treatment of mammary carcinoma. This is advisable because occasionally intrathoracic metastases will be found to accompany an apparently early primary neoplasm, and the existence of intrathoracic spread contraindicates any radical operation. The radiograph provides a valuable record if at a later date there is any doubt as to whether we are dealing with intrathoracic metastases or irradiation fibrosis.

6. There is no present justification for the omission of the radical operation as the most important part of treatment of breast cancer in

properly selected cases. The limits of operability, however, should be more closely fixed. The results from surgery will be greatly improved when more care is exercised in the selection of patients for operation and when the province of the surgeon is more restricted.

Surgical intervention in any but the comparatively early or slow growing varieties of scirrhous carcinoma is not to be advised. It is a common cause of rapid dissemination of the disease both locally and at a distance. We have all seen patients with mammary cancer in whom the tenure of life has been abbreviated by the surgical act.

7. The use of radium by the Keynes and other methods for the treatment of operable breast cancer has no present justification either on a priori grounds or because of the results obtained. The majority of breast cancers are scirrhous in type, and some of them are so highly resistant as to require for their destruction a dose equivalent to ten erythema doses. Now it is impossible to deliver such a dose, except by the interstitial method. But interstitial irradiation of a breast, however carefully carried out, is an uncertain procedure. It is extremely difficult to achieve homogeneous irradiation. The intensity from a radium needle falls off very rapidly and it is difficult or impossible to avoid leaving gaps (especially in so undulating an area), and in these gaps no sufficient dose is received. Thus we find in most cases when a histological examination of the amputated breast has been made after radium treatment, that vast areas of apparently cured cancer are interrupted by spaces in which there are clumps of actively growing cancer cells. These lie ambushed in a thicket of fibrous tissue, awaiting the occasion to make eruption.

Radon is more convenient because we can adapt the length of our containers to the particular tumour, but it is always less efficient against resistant tumours because of its rapid decay. It can never be shown that the biological effect from a dose delivered over seven days or more with radium needles can be reproduced in resistant tumours with emanation. In sensitive growths, of course, it is immaterial whether we use element or emanation. The haphazard introduction of "seeds" is an optimist's gamble. The technique adopted by Kaye Scott and Clendinnen, of Melbourne, in which long radon tubes are employed to pierce the breast in opposite directions at different levels, is the best available technique.

8. The interstitial use of radium preceded by external irradiation with X rays finds its complete justification and its proper place in the treatment of advanced and inoperable breast cancers. I except always the rapidly growing varieties for which external irradiation alone is usually sufficient and in which implantation may be harmful because of its trauma. The gain, however, from irradiation is more often to be measured in months than in years. Thus we increase the number of five-year survivals, but we do not appreciably affect the permanent cure rate.

9. The inoperable breast cancer should be looked on as always inoperable. I have at times been tempted by the local improvement in size and mobility which often follows irradiation, to perform a radical operation. Such a course is not to be recommended.

10. The value of preventive irradiation in the treatment of precancerous conditions of the breast, such as Schimmelbusch's disease, is negligible. X radiation of the ovaries in young women will often increase radio-sensitivity of the breast tumour and slow up the pace of its evolution.

After this decalogue of medical axioms it will be properly inquired: Where, then, lies the justification for radiation therapy in mammary cancer?

My reply is that there is ample evidence to support the view, to which I subscribe, that pre-operative X radiation, correctly carried out, improves the results from radical operation by lessening the risk or degree of cancer cell dispersion. The surgeon is too often unconsciously sowing even as he reaps. The best time for operation is immediately after the completion of the plan of irradiation.

Again, the value of radiation therapy in inoperable mammary carcinoma is incontestable, especially in dealing with secondaries in the spine and in the cervical glands. For some reason the metastases from these cancers are more radiosensitive than the primary lesion. The response to radiation given by secondaries of breast cancer in lymphatic glands is often striking and in strong contrast to that from secondary squamous carcinoma. The effectiveness of post-operative irradiation, employed for the purpose of preventing the formation of local secondaries or of destroying vagrant cells left by the wayside, is open to serious question. We are dealing with an anatomical area in which the vascular and nervous supply has been disarranged, so that the response of the tissues can scarcely be the same. Further, the delivery of an efficient dose of irradiation to the flat surface that remains after amputation without injury to the underlying lung is not always easy.

On the debit side we must admit that irradiation at times causes fibrosis of the lung. Apparently it is the penetrating power of the particular irradiation which counts most in the causation of this condition. Repetitions of treatment are especially to be feared. Cough, dyspnoea and cardiac distress are the well known symptoms of a complication which in the experience of radiotherapists employing modern techniques and scientific control is much less frequent than is alleged. Unfortunately in every instance in which a patient who has had irradiation develops pulmonary metastases, an indignant surgeon inveighs against the mischief of irradiation.

Again, irradiation may disturb the mechanism of defence within the tissues and cause breaking down of the dykes, with the consequent overwhelming of the patient in a flood of malignant disease. The modifications in the natural history of cancer induced by improper irradiation form a fascinating subject worthy of more attention than it has

received. We have all seen such changes and are conscious at times of a new and strange behaviour in malignant disease which dates from the introduction of physical therapy. Unfortunately some radiotherapists are obsessed by the idea that the problem of cure is merely a physical one, and are driven by an imperious urge to higher and higher doses. They lack a proper respect for the sanctity of healthy tissue, and in their brutality are peers with the rougher element among operators. Most of all we have to be on guard against that type of surgeon who, being slightly addicted to radiation therapy, practises an obscure art empirically and imagines he has disguised it as a science.

In the end it is, of course, the distant, and especially the intrathoracic, spread which decides the issue. With our present agents we win purely minor actions and, except in very early or relatively benign conditions, more frequently lose the final campaign. Both methods are merely local in their effect. Radiation therapy has never been shown to have a general or an immunizing effect; in the pathological predicament we call cancer it has not greatly widened the prospect of complete cure. Surgery itself has more noble flights than the performance of an amputation, however masterly its execution. The secret of the solution of the problem may lie in the discovery of the nature of that mechanism, humoral or tissular, which is capable of controlling for months and years the development and growth of cancer cells. That such a mechanism exists there can be little doubt. How else can we explain the sudden development of secondaries ten, fifteen or twenty years after the apparent cure of a primary breast cancer? And what is the influence which decides the occurrence, course, direction and site of these metastases?

For the moment our chief task should be the recognition of precancerous lesions in the breast, and the removal as a routine measure of more unhealthy breasts than at present is sanctioned by practice or sentiment.

A NEW TREATMENT FOR ANTERIOR POLIOMYELITIS AND ENCEPHALITIS AND ITS EXPERIMENTAL BASIS.

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ACUTE anterior poliomyelitis is an acute inflammatory disease, and the toxin of this disease, as in all acute inflammatory processes, constricts the arterioles and venules. According to the arteriolar capillary reaction which I shall describe later, this leads to an acute dilatation of the capillaries with stasis and consequent oedema. This oedema causes loss of function of the spinal cord with paralysis or wasting of the denervated muscles.

The problems in this disease are: (i) to prevent the oedema or to disperse it when it is present; (ii) to prevent wasting of the muscles until the cells of the anterior horns of the spinal cord have recovered sufficiently to take up their normal function again.

The Solution of the Problem.

A possible solution of these problems is based on the following experiments.

Experiment I.

Into a goat weighing 27 kilograms 0.03 grammes of ephedrine was injected. The animal was then anaesthetized with ether and the spinal cord was exposed at the level of the third and fourth thoracic segments. The spinal cord was tied in two places without opening the *dura mater*. The cord was then divided with a knife between the ligatures. The division of the spinal cord in the goat is followed by a complete loss of function, which lasts for several hours. In this experiment not only was there no "spinal shock" but, when the hind limbs were passively extended, considerable force was necessary to flex them, that is, shortening reactions were present. Lengthening reactions were also present, for the limbs took up any position of flexion passively imposed upon them. This indicates that plastic or spinal tone was present in a measurable degree, for the force necessary to flex the limb from an extended to a flexed posture was 1.35 kilograms in the uppermost limb and 1.80 kilograms in the lowermost limb with the animal lying on one side. In the fore limb which exhibited extensor or contractile tone as well as plastic or postural tone, the resistance to flexion from the extended position imposed on it by the contractile tone was 3.15 kilograms. This of course was in the section of the spinal cord above the line of division and in which the neurones were normal, but the function of which was abnormal on account of the action of the ephedrine on the capillaries. The knee jerks were normal in phasic response, but showed a prolonged relaxation time which was due to an increase in postural tone.

Comments on this Experiment.

This experiment shows that under the worst possible conditions, namely, those following the high division of the cord, the activity of that organ can be maintained by the administration of ephedrine. Now I have observed in actual experiments that ephedrine constricts the capillaries. This is followed immediately by a dilatation of the arterioles and venules, so that there is an increase in blood supply. I first noticed this phenomenon some years ago when I observed that the administration of large doses of ephedrine was followed by a feeling of increased warmth under the hand as I grasped the limbs of the animal, but I was unable to explain it until recently. In large doses ephedrine so constricts the capillaries that it leads to a temporary cessation of blood supply in spite of the concomitant dilatation of the arterioles. The consequent anoxæmia excites the cord to hyperactivity, as shown by the increase in plastic or postural tone described in the above-mentioned experiment. This hyperactivity after the administration of ephedrine was also shown by animals whose alteration in behaviour was described in a previously published paper.⁽¹⁾ These results were afterwards confirmed by Hinsey, Ranson and Zeiss.⁽²⁾ By small doses of ephedrine the blood supply is increased by what I shall describe as

the arteriolar-capillary reaction, namely, when the capillaries are constricted the arterioles and venules dilate, and when the capillaries are dilated the arterioles and venules are constricted. It would be impossible for the arterioles and capillaries to be dilated at the same time, for there would be a very much decreased diastolic pressure, as this pressure is maintained principally by the contraction of the arterioles and to a certain extent by the capillaries when they are contracted. It would be equally impossible for the arterioles and capillaries to be constricted at the same time, because that would lead to a tissue starvation and death. The reaction is apparently reversible, as is illustrated by the opposite actions of histamine and acetylcholine. Histamine dilates the capillaries and constricts the arterioles, while acetylcholine dilates the arterioles. The warm limb following an operation on the sympathetic nervous system is due to a dilatation of the arterioles with an accompanying constriction of the capillaries. This, however, may be influenced by chemical and hormonal agents.

The vascular conditions underlying muscular action also illustrate the arteriolar capillary reaction, for, when a muscle is actively contracting, the capillaries are widely dilated, while the arterioles are probably contracted on account of the stimulation of the vasomotor centre accompanying exercise. This slows the rate of blood flow and allows more time for gaseous exchanges. It subserves the katabolic or breaking down process. When a muscle is at rest its capillaries are constricted and its arterioles and venules are dilated. The blood supply is thus increased and subserves the anabolic or process of growth. And this is exactly the action of ephedrine on the blood supply of denervated muscles, as shown by the following experiments. (The capillaries of denervated muscles are usually dilated.)

Experiment II.

Six fully grown rabbits were taken and the common peroneal nerve was divided close to the anterior tibial muscles on one side. Three rabbits were untreated and three were given 0.0015 gramme of ephedrine in their drinking water. They all drank from the same vessel, and probably only once a day, so that the administration of ephedrine was not continuous. At the end of thirty days the animals were killed and the *tibialis anterior* and *extensor communis digitorum* muscles were weighed in each leg. Langley has shown that the difference in weights of muscles in the opposite limbs of the same animal is not great. In this experiment the muscles in the denervated limb of the control animals were 43.7% lighter, on the average, than those of the normal side. In the treated animals, on the other hand, the loss of weight was only 30.18% on the average. In a further series of four rabbits, into each of which 0.0005 gramme of ephedrine was injected intramuscularly once daily, the wasting was only 23.35% in thirty days.

Comments on these Experiments.

It is obvious from these experiments that ephedrine, in addition to keeping up the activity of the spinal cord, also controls wasting, and, if given frequently enough, should be effective in the wasting following the oedema of the cord in poliomyelitis.

Illustrative Cases.

The following cases illustrate the effects of treatment upon patients. I do not see patients in the acute stage, but after paralysis has developed. It would be easier to prevent the onset of paralysis than to deal with it when present, because the paralysis represents the result of damage to the anterior horn cells from oedema. If this oedema is long continued, the effects on the anterior horn cells may be permanent.

CASE I.—The patient, J.R., was a boy of four years of age. Fourteen days before I saw him he had had a rise in temperature during the night and vomited early in the following morning and several times during the following day. He also complained of headache. Three days later he had another attack of vomiting without warning. He took his food that day and vomited clear mucus next morning. Seven days after the acute illness he developed ataxia. His doctor said he seemed to have a general weakness of all his muscles. Dr. H. G. Allen, ophthalmic surgeon, of Newcastle, examined his eyes and did not find any abnormality. Ear, nose and throat examination by Dr. Ewing, of Newcastle, did not reveal any abnormality. The blood count was normal. In the second week of illness he was drowsy.

When I saw him he was falling to the left when he attempted to walk, and when he was admitted to hospital he had intermittent vomiting, particularly in the morning. His knee jerks were absent and the abdominal muscles were weak. I diagnosed the boy's disease as poliomyelitis and affecting especially the medulla and cerebellum. The patient was given ephedrine, 0.0075 gramme, by mouth twice daily. The vomiting lasted two days and he walked normally on the third morning, and he has continued to walk normally since October 22, 1934.

CASE II.—The patient, G.S., was a boy of four years of age who had had an attack of pneumonia in September, 1934. He recovered from this and some three weeks later developed a high temperature with pyelitis and impairment of function of his lower limbs. When I saw him pyelitis was no longer present, but the boy had a spastic walk, a double Babinski sign and loss of control of his bladder and rectum. There was wasting of the sacro-spinalis muscle in the left lumbar region. I diagnosed the condition as a partial transverse myelitis of the poliomyelitic type. The patient was given ephedrine, 0.0075 gramme, three times a day by mouth. He gained control of his bladder and rectum the following day and walked normally at the end of a week. I saw him first on January 7, 1935, and that was the date of the commencement of the treatment. When he was seen on February 2, 1935, the control of his bladder and rectum was perfect; his walk was normal. The wasting of the left sacro-spinalis had disappeared. He was taking ephedrine between the two dates mentioned above.

CASE III.—The patient, A.C., was a boy, aged four years, who had a rise in temperature and began to vomit on February 28, 1935. This was followed three days later with paralysis of both upper and lower limbs. His bladder had to be catheterized on account of inability to pass urine. He was constipated also. When admitted to hospital on March 11, 1935, he was completely paralysed in both upper and lower limbs. The abdominal and respiratory muscles were also paralysed, as shown by the distended abdomen and retraction of the respiratory muscles during the movements of the diaphragm, which was the only voluntary muscle in function. He was very tender when touched or moved. The sister who nursed him thought he would die, as his condition was so low. He was given ephedrine, 0.0075 gramme, every three hours day and night by mouth, and the next morning he could pass his urine normally. He could also move both hands and the left foot both in plantar flexion and dorsiflexion. His intercostal muscles returned to function three days after the commencement of the treatment. After seven days the dose of ephedrine was changed to 0.0075 gramme three times a day. At the present

time (fourteen days after the commencement of the treatment) he has regained control of his neck muscles so that he can hold up his head; the intercostal muscles are working normally. There is voluntary movement in all muscles of both upper limbs and lower limbs, excepting the flexors of the right hip. The muscles of the abdominal wall have also recovered. The movements are, of course, weak, and in many instances no more than minimum movements. (A minimum movement is the work done by a muscle in lifting its own weight between its approximated attachments.) He is still a little tender and disinclined to move his limbs as a whole, excepting under warm water. There is practically no wasting apparent. His condition is continuing to improve.

CASE IV.—The patient, B.B., was a little girl of sixteen months of age, with loss of power in the right lower limb. There was a history of vomiting and of a rise in temperature ten days previously. On examination there was an almost complete loss of power in the right quadriceps and the dorsiflexors of the ankle of the right foot. She was given 0.005 grammes three times a day. Two days later the quadriceps showed sufficient recovery for the child to walk with a bent knee, and the dorsiflexors of the ankle showed a minimum movement. Three days later still the child dorsiflexed her ankle when walking. I had a celluloid splint made for night wear, but I allowed her to walk with a dorsiflexing strap to her shoe on account of the remaining paresis of the dorsiflexors of the ankle, but with an unprotected knee, because the quadriceps had recovered enough power to enable the patient to walk normally, though wasting was still apparent.

Two Animal Patients: Experiments on Dogs.

Two dogs had all the signs of acute distemper, and these were followed in about seven days by choreiform movements affecting both fore and hind limbs. This I took to be a sign of encephalitis, probably affecting the basal nuclei. The larger of the dogs, a kelpie weighing about 18 kilograms, was given ephedrine, 0.0015 grammes, twice a day, and the smaller, a fox-terrier, was given 0.0075 grammes twice a day. The choreiform movements lasted only thirty-six hours and then disappeared and have not returned, although over six months have elapsed since treatment was given.

Conclusion.

1. Ephedrine in small doses given frequently may be effective in relieving oedema of the cord in poliomyelitis and preventing wasting.
2. It should be given in the preparalytic stage to prevent oedema and subsequent paralysis.
3. It should be given in the postparalytic stage to keep up the nutrition of the muscles until recovery has taken place. (Note: In one observation it appeared to inhibit fibrillation, the supposed cause of wasting.)

Acknowledgements.

I wish to acknowledge my indebtedness to Mr. Albert Khan, fifth year medical student, for his valuable assistance in these experiments. His duty was the care of the rabbits during the wasting experiments, and he also assisted me at the operation on the spinal animals. My thanks are also due to Professor A. N. Burkitt for the use of his laboratories, and to the Bosch funds for defraying the expenses of the experiments.

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THE DANGERS OF INDISCRIMINATE ALKALI THERAPY.

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HURST AND STEWART⁽¹⁾ and COOKE⁽²⁾ have drawn attention to the danger of the occurrence of alkalosis in some cases of duodenal ulcer or hyperchlorhydria when alkaline treatment is adopted. For this reason, Hurst and Stewart have stressed the importance of the use of a local antacid in preference to a systematic alkali. The presence of kidney damage has been held to be one of the likely antecedents to the subsequent development of alkalosis. In addition to this cause, which has not always existed in the reported cases, the blood reaction prior to treatment seems to be of importance. This study was carried out in order to investigate this point.

GATEWOOD,⁽³⁾ in America, has shown that symptoms and signs of alkalosis developed in 18% of his cases at some stage during intensive alkaline treatment. COOKE⁽²⁾ reported nine cases occurring in two hundred treated patients, an incidence of 4.5%. EUSTERMAN⁽⁴⁾ holds that if alkaline treatment is carried out indiscriminately, 25% of patients may develop alkalosis. In America much larger doses of alkali were used than in the English cases.

A mortality of 4.4% occurred in the 68 reported cases of alkalosis occurring during alkaline treatment of gastric and duodenal ulcers.

Blood Reaction.

The regulation of the hydrogen ion concentration of the blood is maintained within the narrow normal range of 7.47–7.34 (hydrogen electrode method) by a complex means, and the adjustment is very delicate. The two groups of factors concerned are: (i) the physico-chemical processes occurring in the blood; and (ii) the vital reaction of the respiratory centre, the liver, and the kidney.

When there is a tendency to acidæmia the acid phosphate is excreted in the urine, the blood thereby being made more alkaline. The reverse occurs when there is a tendency to alkalæmia. Thus the reaction of the urine is related to the reaction of the blood, a more acid urine being associated with an acidæmia and a more alkaline urine with an alkalæmia.

SUNDSTROEM⁽⁵⁾ has shown that there is a tendency for the development of alkalosis during the hot months of the year, due in part to over-ventilation of the lungs, resulting in a diminution of the carbon dioxide of the blood, with a corresponding fall in the blood alkali.

Gastric Acidity.

APPERLY and SEMMONS⁽⁶⁾ have demonstrated that the artificial induction of an alkæmia lowers the gastric acidity as revealed by a fractional test meal, whereas an acidæmia raises the acid curve. This

demonstrates the fact that some relationship exists between the reaction of the blood and the gastric acidity. The reaction of the urine is related to the reaction of the blood, so that it seems probable that the reaction of the urine may bear some relationship to the gastric acidity. For this purpose the hydrogen ion concentration of the urine passed just prior to the performance of a test meal was examined in 449 cases. In order to study the effect of the temperature on the urinary hydrogen ion concentration the average reactions obtained during the hot and cold weather were compared. The two periods taken were July to September, 1933, and from December, 1933, to February, 1934. The following figures were obtained:

Period.	Total Number of Cases.	Temperature.	Humidity.	pH of Urine.
July-September ..	224	16.05° C. (60.9° F.)	64%	5.38
December-February	225	23.72° C. (74.7° F.)	70%	5.74

The difference observed is quite definite, the urine being more acid in the winter than in the summer. This agrees with the findings of Sundstroem concerning the occurrence of alkalosis during the hot weather.

Nye and the author⁽⁷⁾ have previously pointed out that the percentage of achlorhydrias in the summer (26.5%) is greater than in the winter (17.5%). Further, that the average acid curve is higher in the winter than in the summer.

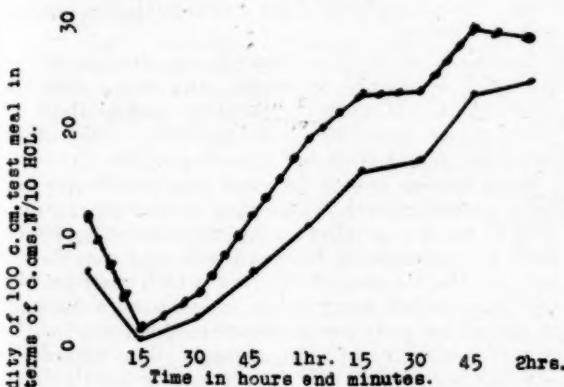


FIGURE 1.

The dotted line is the average winter curve in 344 cases—17.5% achlorhydria. The continuous line is average summer curve in 403 cases—26.5% achlorhydria.

The test meal curves in 258 cases were further divided into those of achlorhydria, normal and high curves.

The average urinary hydrogen ion concentration of the three groups was also calculated. The following table indicates the findings.

	Number of Cases.	Urinary pH.
Achlorhydrias ..	42	5.70
Normal curves ..	119	5.58
Hyperchlorhydrias ..	97	5.35

These figures demonstrate that in a broad manner the urinary pH varies in accordance with the gastric acidity, that is the urine is more acid in cases of hyperchlorhydria than in the normal cases and more alkaline in cases of achlorhydria than in the normal cases. However, although this agreement between urinary pH and gastric acidity is true when considering groups, it does not hold true in the individual cases with sufficient frequency to be of diagnostic importance.

Other factors may be concerned in altering the reaction of the urine apart from the reaction of the blood, such as delayed bladder emptying and infection in the urinary tract. Also in some cases at least the gastric acidity as revealed by the fractional test meal does not always reveal the true secretory ability of the stomach. Local gastric lesions, especially gastritis, alter the acidity; and psychic influence during the test may either depress or increase the acidity. These factors may account for some of the disagreement between gastric acidity and urinary pH.

Treatment.

In the series the urinary pH was below 5.0 in 11.9% of patients with achlorhydria, and in 22% of patients with hyperchlorhydria. The pH was above 6.0 in 26.2% of patients with achlorhydria, and in 16.5% of patients with hyperchlorhydria. The findings are important from a therapeutic point of view, especially with regard to the type of acid or alkali used. Previously it has been stated that the urinary pH is an approximate indication of the blood reaction, so that the knowledge of the urinary reaction before treatment would be a guide as to whether there was a tendency to alkalaemia or acidæmia in the blood.

The figures quoted show that in 16.5% of cases of hyperchlorhydria the urinary pH was on the alkaline side of 6.0, a level which indicates that there already exists a tendency to alkalosis. These 16.5% of patients, then, are in a very real danger of developing an alkalosis if more systemic alkali be given, so that it is imperative to treat them with only local antacid such as tribasic phosphates.

It is interesting that Gatewood, in America, has shown that alkalosis developed in 18% of his cases during intensive alkaline treatment. The closeness of these figures seems more than a coincidence, and although no actual proof is available, it seems probable that the 16.5% of patients with a relative alkalaemia are those who develop alkalosis after treatment. No direct control was carried out to prove this, as it was considered too dangerous to induce alkalosis

on account of the mortality of 4.4% which has occurred in 68 cases of alkalosis that arose during alkaline therapy of gastric lesions. At the other end of the scale there are 22% of cases with a urinary pH on the acid side of 5.0, indicating the existence of a relative acidemia. These patients should be in no danger of alkalosis and will probably benefit generally from the use of systemic alkali such as sodium bicarbonate or potassium citrate. The cases lying in the intermediate range should be treated according to the hydrogen ion concentration in the individual case.

A similar therapeutic guide in the treatment of patients with achlorhydria can be gained from a study of the hydrogen ion concentration of the urine.

Sansum and Gray⁽⁸⁾ have pointed out, and it has been the finding of other physicians, that some patients with achlorhydria are unable to tolerate inorganic acids, but their condition improves with administration of the organic acids present in lemons and oranges. These fruits, although locally acid in the stomach, leave an alkaline ash and decrease the acidity of the blood. It is feasible to suppose that this type of case may be included in the 11.9% of patients with achlorhydria who have a urinary pH below 5.0. It would place this group in a category similar to the patients with hyperchlorhydria who have a pH above 6.0 and who need local antacids, whereas the patients with achlorhydria need a local acid but a systemic alkali.

At the other end of the scale 26.2% of patients with achlorhydria have a pH above 6.0, so that these persons should benefit by a general as well as a local acid. By rendering the blood more acid it should be possible to produce a flow of hydrochloric acid into the stomach, and theoretically ammonium chloride should be the most suitable drug.

The indicator method was used for determination of the hydrogen ion concentration.

Summary.

1. The risks of alkalosis during alkali therapy have been indicated.
2. The broad relationship between the hydrogen ion concentration of the urine and the gastric acidity has been demonstrated.
3. Some suggestions with regard to the treatment of gastric conditions have been brought forward.

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A SURVEY OF MUSSELS ON A PORTION OF THE AUSTRALIAN COAST.

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ALTHOUGH no outbreak of mussel poisoning has ever been recorded in Australia, it seemed worth while to ascertain if any of the mussels, particularly those occurring on the Pacific Coast, were poisonous in the summer during the spawning season.

Between January 7 and February 28 of this year I have examined mussels from a number of places on the coast between Melbourne and Sydney. Mussels are plentiful in Port Phillip Bay, at Lakes Entrance and in Sydney Harbour, but are only sparsely distributed over the intervening coast line. Here they are found not on the open ocean coast, but at the mouths of tidal rivers.

Two species of Australian mussels were investigated, *Mytilus planulatus* and *Modiolus australis*, though only the former is ever used for food. *Modiolus australis* is usually of small size, striated longitudinally, but with an outer hairy covering. The shell is approximately kidney-shaped, and the inside surface often exhibits mother-of-pearl colouring. It exists in colonies on the sides of rocks at low water mark, below the oyster level. This species is a source of annoyance to the oyster culturalist, as it is particularly hardy and tends to retard the proper development of the oyster by settling on the beds. It grows rapidly and consequently its continual removal entails much extra work. The males have white and the females orange flesh colouring.

Mytilus planulatus is larger in size than *Modiolus australis*, blue-black in colour, and has a smooth, shiny shell. It grows separately rather than in colonies, as does *Modiolus australis*. The flesh colouring varies from white to fawn-pink.

Both species appear to need sheltered water for their proper growth. This may be due to the fact that on the ocean side they become torn off by heavy seas; for example, at Nullica Creek they were found only on the lee side of the rock which guarded the entrance. After heavy rains, which cause a flooding of the rivers and thus a decrease of salinity of the water, numbers of the mussels die, especially *Mytilus planulatus*, which seems to be particularly sensitive to such changes.

In Port Phillip Bay, at Lakes Entrance and in Sydney Harbour *Mytilus planulatus* was found growing plentifully on rocks and piles. They were also found at Eden in the mouths of two tidal rivers, the Nullica and Kiah, in the Pambula River and at Merimbula, four miles further north. At Bateman's Bay only shells were found, the beds having died out or being situated in deep water.

Modiolus australis was found at Eden in the Nullica and Kiah, and at Merimbula. At Bateman's Bay there were extensive beds. At Lake Burrill, thirty-three miles north of Bateman's Bay, a single

bed was found. This lake is salt and connected with the sea by a channel. Owing to its great depth, tidal changes in the lake are very small and as a result the mussels are always covered with six inches or more of water. The coast between Eden and Sydney was very carefully explored and no mussels were found, except at the places mentioned.

It was noticeable that as one proceeded further north and the cultivation of oysters became more general, mussels, especially *Mytilus planulatus*, became less frequent. That this was not due to the increase in temperature of the water was proved by the immense quantities growing in Sydney Harbour. According to local residents, from ten to fifteen years ago there had been extensive mussel beds at Wollongong, Bateman's Bay, Wolliga Lake and Bega River which had since disappeared.

Mr. Roughley, of the Sydney Technological Museum, informs me that on the New South Wales coast there is a seasonal fluctuation in the number of oysters and mussels. In any season, for no known reason, the oyster may predominate over the mussel, whilst in the following year the opposite state of affairs may exist.

Mytilus planulatus has a moderately wide use as an article of food round Port Phillip Bay and at Lakes Entrance. In some places picnics are held where the shell fish can be gathered and cooked and eaten on the spot. In Melbourne mussels are sold in large quantities, both fresh and cooked. In Sydney, though these mussels are plentiful, gathering them has been prohibited owing to fear of bacterial contamination from the city deep drainage systems, which empty into the harbour at several points.

I have examined *Mytilus planulatus* obtained from Geelong and Hampton on Port Phillip Bay, from Lakes Entrance, from Nullica Creek and Kiah River, Eden, Merimbula, Pambula and from Sydney Harbour. Of *Modiolus australis* samples were examined from Nullica Creek and Kiah River, Eden, from Bateman's Bay (Hawk's Nest and south side and from deep and shallow water), from Lake Burrill and from Merimbula.

The mussels were tested for toxicity as follows. The flesh of approximately two to three dozen mussels was ground up and boiled in from 50 to 100 cubic centimetres of water for 10 to 15 minutes, the extract being kept just acid to Congo red (pH 3.0). The watery extract was now filtered or, preferably, centrifuged. The acid extracts were neutralized and tested by injection intraperitoneally into white mice of from 20 to 30 grammes weight. The doses used ranged between 1.0 and 0.5 cubic centimetre. For controls the extract was made alkaline, boiled for ten minutes, again neutralized, and equivalent volumes were injected into mice.

During the survey samples were collected between January 29 and February 8 on the journey from Melbourne to Sydney and acid extracts were sent to Melbourne, where they were neutralized and tested. On the homeward journey between February 18 and February 24 further samples were collected.

These were carried by car to Melbourne, being kept fresh by immersion in the sea for one hour daily. On arrival they were placed in a refrigerator at 0° and remained fresh for a fortnight. Acid extracts were made and tested after neutralization during the first few days.

The intraperitoneal injection of white mice with poison derived from Californian mussels, as described by Prinzmetal, Sommer and Leake,⁽¹⁾ causes highly characteristic symptoms. If the dose be a lethal one, uneasiness, ataxia and dyspnoea are observed within a few minutes. Respiration ceases and the mice give several violent asphyxial convulsive springs, fall over on one side, and die after a few terminal gasping respirations. Occasionally with sublethal doses paralysis of the hind limbs is an obvious symptom, and after subcutaneous injections, which are more slowly absorbed, general motor paralysis is observed.

In my crude extracts toxic substances were frequently present, which were not destroyed, as is mussel poison, by heating in alkaline solution and which, when the dose was as large as 1.0 cubic centimetre, caused prolonged collapse for many hours, terminating in recovery or in death. Sometimes with lesser dosage (0.5 to 0.7 cubic centimetre) there was a curious dragging of the hind limbs, the animal twisting the body sideways or dorsally. A few extracts gave symptoms closely similar to those caused by Californian mussel poison, with rapid death from asphyxia, but the poisonous substances present were not destroyed by boiling for ten minutes after the addition of excess of alkali. Unhappily these toxic samples were all obtained on the outward journey to Sydney, and crude extracts of the same species of mussels collected from the same places a few days later on the homeward journey were non-toxic. It was not, therefore, worth while attempting to isolate poison from them in purer form by the methods applied by Sommer.⁽¹⁾ In Table I are recorded only the results of injection in which symptoms were observed similar to those caused by Californian mussel poison.

The curious symptom group in which the body was stretched with concavity dorsally or to one side and the hind limbs dragged with observed with several extracts, notably those from Geelong and Hampton (January 20). In these tests the mice all recovered. Attempts to extract a toxic substance from mussels from Hampton by the methods used by Sommer resulted in a very feebly toxic residue similar in appearance and physical characters to Sommer's preparation. It was precipitated by ether from alcoholic solution as a white powder which rapidly became brown when exposed to the air, and took up water with avidity.

Of extracts made from *Modiolus australis* collected on the journey from Sydney to Melbourne (January 29 to February 8) at Bateman's Bay, Merimbula and Eden (Nullica Creek and Kiah River), and from *Mytilus planulatus* at Merimbula, Pambula, Nullica Creek, Kiah River and Lakes Entrance, none caused typical symptoms. In a large

TABLE I.
Results of Intraperitoneal Injection of Toxic Crude Extracts of Mussels in White Mice.

Date.	Locality.	Weight of Mouse in Grammes.	Dose of Extract in Cubic Centimetres.	Boiled or Unheated.	Result.	Remarks.
<i>Modiolus australis</i> February 1, 1935.	Bateman's Bay.	19 18 19 19 22 19 18	1.0 1.0 0.7 0.5 1.0 0.7 0.5	Unheated. Unheated. Unheated. Unheated. Boiled. Boiled. Boiled.	Died in 37 minutes. Died in 12 minutes. Died in 11 minutes. Died in 24 hours. Died in 15 minutes. Died in 4 hours 50 minutes. Died in 9½ hours.	Dose partly subcutaneous.
February 4, 1935.	Lake Burrill.	24 23 19 26 22 21 26 21 20 30 22 19	1.0 0.7 0.5 1.0 0.7 0.5 1.0 0.7 0.5 1.0 0.7 0.5	Unheated. Unheated. Unheated. Boiled. Boiled. Boiled. Unheated. Unheated. Unheated. Boiled. Boiled. Boiled.	Died in 7 minutes. Died in 6½ minutes. Died in 15 minutes. Died in 7½ minutes. Died in 8 minutes. Died in 4½ hours. Died in 3 hours 9 minutes. Died in 6 hours. Died in 12 hours. Died in 2½ hours. Died in 24 hours. Died in 2½ hours.	Orange (spawning). White.
<i>Mytilus planulatus</i> . January 31, 1935.	Eden, Nulla Creek.	20 17 19 21	1.0 0.8 1.0 0.8	Unheated. Unheated. Boiled. Boiled.	Died in 36 hours. Dyspnoea, stoxia, jerky movements, fully recovered in 5½ hours.	Orange.

series of mice which received doses of one cubic centimetre of crude extract, there were only three deaths between twenty-four and forty-eight hours after injection.

Not much stress can be laid upon the results obtained in this survey, since the beds studied have been investigated on only two occasions at an interval of about two weeks. Repeated investigation might easily prove the development of toxicity either in this or in other seasons. The only seriously toxic extracts obtained were from *Modiolus australis*, which appears to be unsuited for food. In any case no one is likely to eat mussels along those portions of the coast where oysters are cultured, and for this reason alone further investigation of this region is unnecessary.

Unless, as in Europe, mussels in enclosed waters (for example, Port Phillip Bay or Lakes Entrance) suddenly become toxic, it is unlikely that any serious outbreak of mussel poisoning will occur in this part of Australia. Sydney is protected by considerations already indicated.

Reference.

¹⁰ M. Prinzmetal, H. Sommer and C. Leake: "The Pharmacological Action of 'Mussel' Poison", *The Journal of Pharmacology and Experimental Therapeutics*, Volume XLVI, 1932, page 63.

Reports of Cases.

STRICTURE OF THE URETHRA AFTER TRAUMATIC RUPTURE WITH RESULTING RECTO-URETHRAL FISTULA.

By HOWARD BULLOCK, M.B. (Sydney), F.R.C.S. (England), B.Sc. (Oxon).

Honorary Surgeon, Sydney Hospital; Honorary Surgeon, Prince Henry Hospital.

E.L., AGED sixteen years, consulted me in May, 1934, for stricture of the urethra. He was shown at a meeting of the Branch in October, 1934, and a short résumé of his

history appeared in THE MEDICAL JOURNAL OF AUSTRALIA on December 8, 1934. It is the first case of traumatic urethro-rectal fistula that has come under my notice, and several colleagues have approached me and asked for further details and suggested that some diagrams would be helpful. For the schematic drawings accompanying these notes I am indebted to Mr. Farrell.

The boy was injured four years before consulting me by falling straddle-legged across a fence. External urethrotomy was performed and soon afterwards he was transferred to Sydney.

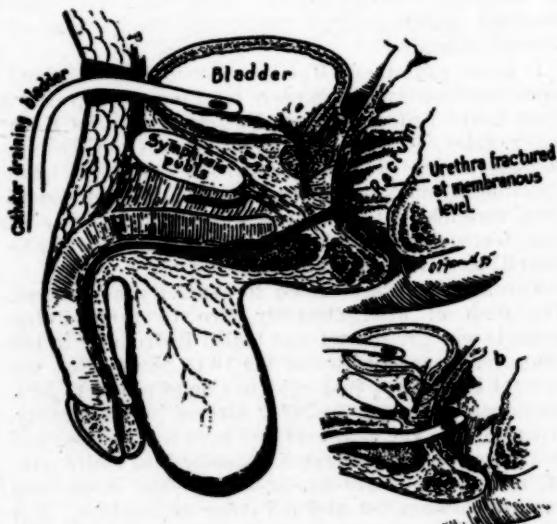


FIGURE 1.
Showing condition found at operation. b: showing how the catheter passed into the rectum.

The result at the end of four years, after (according to the patient) nineteen operations under general anaesthesia, was a human derelict with a permanent suprapubic drain, urethral stricture, and a recto-urethral fistula through which faeces and gas poured at defecation.

On May 28, 1934, left inguinal colostomy and external urethrotomy were performed, the stricture was excised and

the ends were brought together after the method described in THE MEDICAL JOURNAL OF AUSTRALIA of November 23, 1918.

The opening in the rectum was closed and a catheter tied in for a week and then replaced by another catheter for a week. When an attempt was made to pass a third catheter the fistula to the rectum reopened.

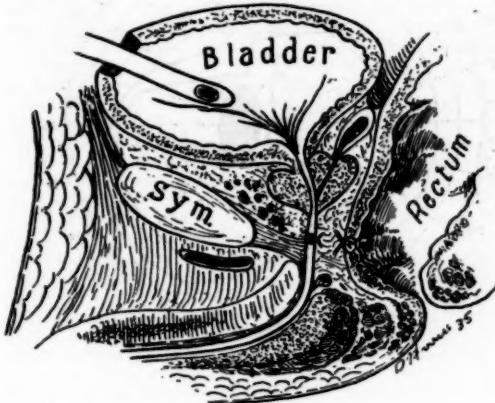


FIGURE II.

Showing end-to-end union of urethra and closing of fistula in the rectum as carried out at the first operation.

On June 30, 1934, a quadrilateral area 3.75 by 3.75 centimetres (one and a half by one and a half inches) was dissected from the anterior wall of the rectum, care being taken to preserve its deep attachments and to insure a free blood supply. This detached area was then fashioned into a new urethra over a catheter tied into the bladder. The hole in the rectum was repaired, gauze was packed high up between the newly formed urethra and the rectum; it was left for seven days and was then replaced by fresh gauze. The catheter was removed in ten

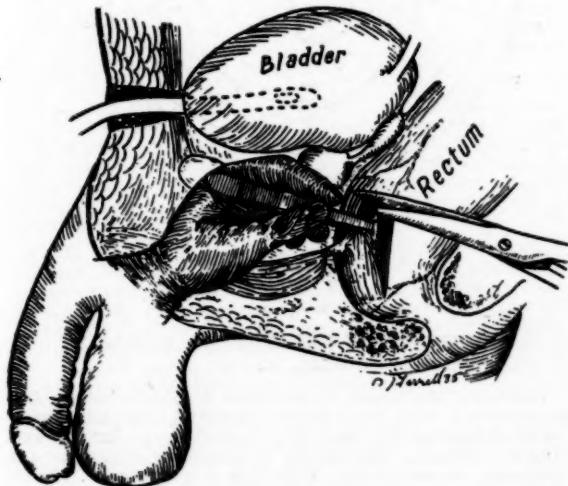


FIGURE III.

Dissecting out quadrilateral area from the anterior wall of the rectum with fistulous opening in the centre, preserving the attachments to distal part of the urethra and surrounding tissue to insure free blood supply.

days, and on July 21, 1934, approximately three weeks later, a 13/16 sound was passed with ease. Shortly afterwards the cystostomy and colostomy were closed and the patient left hospital in August in comfort and comparatively good health.

On January 1 of this year, after more than three months' freedom from any urethral dilatation, no signs of stricture could be detected on passing with ease a 13/16 sound. The boy has gained approximately 25.2 kilograms (four stone) in weight since leaving hospital in August and is quite normal in every way, with a healthy outlook on life.

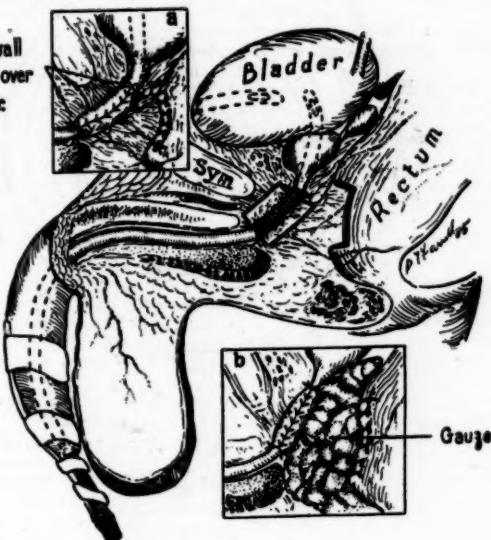


FIGURE IV.

Showing quadrilateral area of anterior rectal wall attached to urethra. *a*: area of rectal wall sutured over tied-in catheter, rectum sutured. *b*: gauze packed into space between newly made urethra and rectum.

The great lesson to be learnt from this case is that the surgeon should be as expert in the perineal approach to the urinary bladder as suprapublically.

The several drawings explain themselves.

TWO CASES ILLUSTRATING THE VALUE OF QUANTITATIVE PERIMETRY.

By KEVIN O'DAY, M.D. (Melbourne), D.O.M.S. (London),
Clinical Assistant to Ophthalmic Surgeon, Saint Vincent's Hospital, Melbourne.

EVERYONE will agree with Dr. Rupert Downes ("Diagnosis of Intracranial Tumours", THE MEDICAL JOURNAL OF AUSTRALIA, January 26, 1935) that "too great stress cannot be laid on the necessity for plotting the fields of vision in every suspected case of tumour". But as it is necessary to determine accurately the central visual acuity and the presence or absence of any local condition of the eye which might cause a field defect before any examination of the field is attempted, it is obvious that perimetry must lie within the special domain of the oculist.

In every perimetric examination the Bjerrum screen must be used in conjunction with the perimeter. It is quite erroneous to say that "a Bjerrum screen is sufficient in most cases". The surgeon relying on either instrument alone is apt to fall into grave error or fail to gain the information he seeks. The screen must be used for the accurate investigation of the central field lying within a circle of 28° from fixation (Traquair). The periphery is investigated with the perimeter.

Chart I illustrates a "trap" waiting for us should we rely only on the screen. The patient was referred to me by Dr. F. F. D'Arcy for a field examination. The perimeter revealed a bitemporal hemianopia. The screen confirmed this and showed in addition a scotoma in the right para-

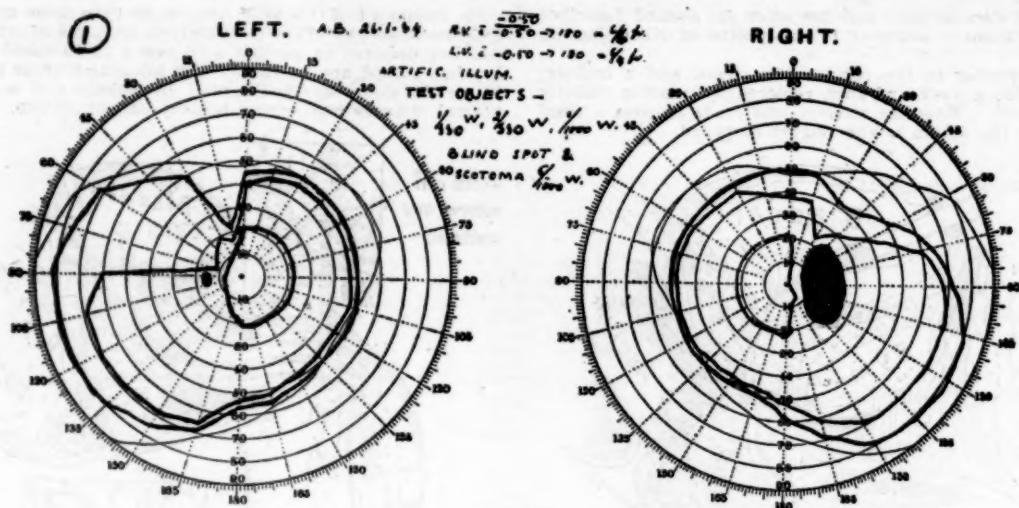


CHART I.

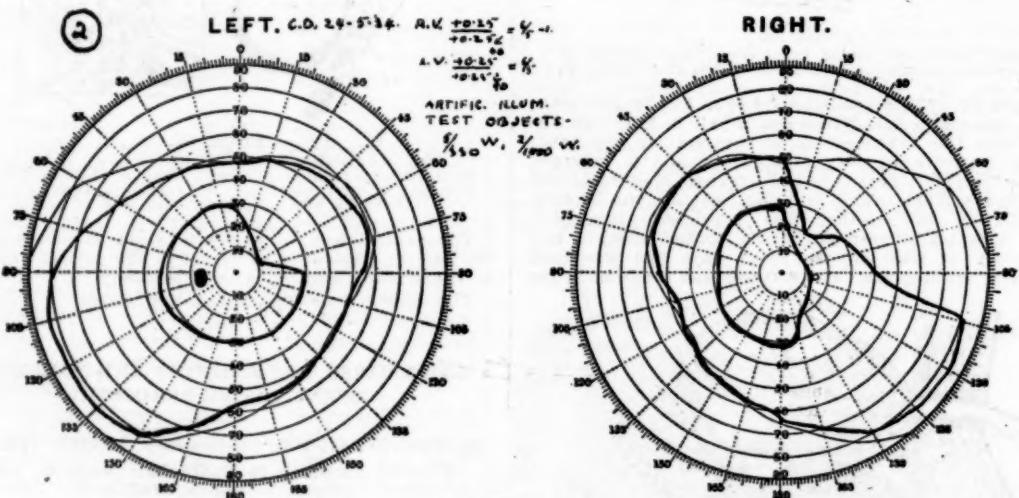


CHART II.

central temporal field. The scotomatous onset of disturbances in the chiasmal region is well known. Nevertheless I have known a similar lesion to have been attributed on one occasion to tobacco amblyopia, and on another to retrobulbar neuritis. The mistake arose through relying on the screen alone. In the present case the diagnosis of pituitary tumour was confirmed at operation by Dr. Leo Doyle and Dr. D'Arcy.

Case II was referred by Dr. John Hayden. The perimeter revealed a right upper temporal quadrantic hemianopia. With the object used, the left peripheral field was normal. The screen, however, revealed that the hemianopia was bilateral, homonymous and incongruous, indicating a lesion of the left optic tract. If the perimeter had not been supplemented by the screen, the lesion would have been placed in front of the chiasma instead of behind it.

In both cases the fields were taken with Traquair's perimeter and a Bjerrum screen at a distance of one metre.

In conclusion, no intracranial surgeon should be without a copy of Traquair's "Clinical Perimetry", the classical work in English on the subject.

Reviews.

NUTRITION IN RELATION TO DISEASE.

PROFESSOR MELLANBY, as professor of pharmacology and as physician to a large general hospital, has attacked a series of medical problems from both the experimental and clinical aspects. The results of these investigations are discussed in his book, "Nutrition and Disease", which affords a demonstration of the interaction of laboratory and ward experiences in the furthering of medical science.²

He explains that only a brief account of such subjects as rickets and dental caries has been given, because he feels that the answers to these particular problems have been obtained in their "practical clinical aspects". The

² "Nutrition and Disease: The Interaction of Clinical and Experimental Work", by E. Mellanby, M.D., F.R.C.P., F.R.S.; 1934. Edinburgh: Oliver and Boyd. Demy 8vo, pp. 190, with illustrations. Price: 8s. 6d. net.

many medical men who feel that neither of these problems has been satisfactorily solved, would surely have appreciated a much fuller discussion of the work which has been carried out in these fields, more particularly as the Mellanbys have been recognized as authorities on these subjects for practically twenty years. Such subjects as the relation of nutrition to infection and of diet to degenerative disease of the nervous system, which are obviously in the early stages of development, are, because of their uncertainty, discussed much more fully.

In discussing rickets, the author makes the interesting observation that the early discovery of vitamin *D* was rather unfortunate in that it probably prevented workers from appreciating the importance of other constituents of food which influence bone calcification and growth. One practical aspect of this action of other constituents of a diet, that is, that rickets may be produced by an excess of cereals, was established by the author some years ago.

The excellent chapter on dental structure and disease is based on M. Mellanby's seventeen years of thorough and individual work on these problems, and includes the welcome statement that dental structure cannot be regarded as being controlled by the one factor, vitamin *D*, but rather by a series of interactions, some favouring and some antagonizing perfect architecture. It is particularly interesting to read that the cereal-free diet, rich in vitamin *D*, which produced virtual suppression and healing of dental caries in a group of children, contained plenty of jam, sugar and other carbohydrates which have been incriminated by many authorities.

The book concludes with two most stimulating chapters, dealing with the effect of nutritional disturbances on the nervous system, which raise the hope that the problems of the obscure aetiology of the commoner degenerations of the nervous system may soon receive some measure of solution.

HUMANITY AND THE UNIVERSE.

For Dr. Arabella Kenealy there is a "God of illimitable Universe" who works "semipeternally" by "His universal law of Evolution", thus creating beings infinite in number and endowed with powers and impulses.¹ Both for celestial bodies and the creatures belonging to them the dominant influence is gravitation. "Newton's Gravitation", she says, explains "the genesis of the Cosmos", the energy of gravitation and that of creation being identical.

All bodies on the earth, animate and inanimate, have a centre of gravity and a vertical of gravity in the portion of which below the centre the impulse is gravitational and in that above the centre levitative. The quadruped, the biped, the trees of the forest all show this arrangement.

The book claims to explain "the phenomenon of sex, its origin and development, and its significance in the evolutionary process". The author writes:

If the Prime Energy of Gravitation is at the same time the Prime Energy of Creation—then its equal and opposite centrifugal and centripetal gravitational-creative impulses inter-operating in the progressive evolution of the Cosmos may be in fact intrinsically male and female creative potentials. And if so, Matter itself is a complex of male-positive and female-negative opposite gravitational-creative potentials.

And again it is said:

All material creation must be then of similar dual constitution; with male and female threads of structure interwoven in the fabric of it like weft and warp of stuff woven in a loom of industry.

Creation is said to show perfect balance in the operation of male and female creative principles. Mendel's dominants and recessives are equated with maleness and femaleness respectively.

¹"The Human Gyroscope: A Consideration of the Gyroscopic Rotation of Earth as Mechanism of the Evolution of Terrestrial Living Forms", by A. Kenealy, L.R.C.P.: 1934. London: John Bale, Sons and Danielson. Foolscap 4to, pp. 312, with illustrations. Price: 12s. 6d. net.

The author has much to say about mannish women and effeminate men, whom she stigmatizes as "modern human hermaphrodites" or "sex-intergrades". She criticizes present-day culture because it tends to produce such intergrades in large numbers. She declares that "the majority of schoolboys are notably weedy, ill-nourished and under-conditioned (and many of them underfed), with piqued faces, pinched nostrils, and starved skins, chins of blade-like sharpness, nerves on edge, neurotically restless, or neurotically languid—in poor case, truly, for healthy vigorous structure-building".

As to the other sex, she commiserates with "the neuter hoyden-girls, whom the schools are standardizing" as being "obviously abnormal products of their abnormal training". And again she speaks of the "raw-boned unfeminine frames, prominent noses, and big hands and feet" resulting from strenuous training which has "earned for our unfortunate, excellently-meaning Girl Guides their cruel title of 'Girl Guys'".

Enough has been said to show the wide range of the author's thinking. Whether the reader considers her thesis is satisfactorily supported or not, he will certainly find much food for thought in this book. The chapters on the relations between men and women in present-day civilizations, in which Dr. Kenealy maintains that feminist doctrines are diametrically opposed to progress, are well worthy of study.

The book is not the easiest to read. The style is often involved. The author has an unpleasant habit of dispensing with the definite article where its use is indicated. She defies convention also in what she sets forth as sentences. The following extract, short as it is, illustrates both these peculiarities:

For all the world like joint revolving on domestic spit. Device that any child can understand: yet perfect in achievement of its objective.

GYNÆCOLOGICAL CONDITIONS.

THE fifth edition of "Diseases of Women, by Ten Teachers", edited by Sir Comyns Berkeley, J. S. Fairbairn and Clifford White, has recently been published.¹ The method adopted in the production of this book has been to portion out the subjects among the ten authors, then each manuscript has been typed, manifolded and distributed among the whole body. Numerous meetings were held, at which the whole of the matter was criticized and amended to include, as far as possible, the views of all.

The genius of the British race appears to consist in the ability of collecting various conflicting opinions, sometimes of a highly controversial nature, modifying or eliminating those destined to create turmoil, and producing a result of immense benefit to humanity. While this is wholly admirable when sordid international political affairs are in question, one feels a slight disappointment that the more elevated atmosphere of scientific thought, with its cooler and more dispassionate judgement, should be similarly treated. A book, of necessity, must suffer to some extent when valuable individual opinions are subordinated to a common general one. This point is well illustrated in the discussion of acute salpingitis. The opinions of those who advocate early operation are fully given, as well as those of their opponents, but no opinion is expressed as to which procedure the authors consider gives the better results and which the authors advocate. An impartial attitude is maintained in controversial treatment; this may be all very well for an experienced practitioner, but may not help a younger one.

At the same time it must be realized that when a book reaches the fifth edition it has evidently supplied a need

¹"Diseases of Women", by Ten Teachers, under the direction of Comyns Berkeley, M.A., M.D., M.C., F.R.C.P., F.R.C.S., M.M.S.A., F.C.O.G.; Fifth Edition; 1934. London: Edward Arnold and Company. Medium 8vo, pp. 580, with illustrations. Price: 18s. net.

of the profession. It may be stated at once that this book gives a thoroughly sound exposition of gynaecological opinion. The book is divided into ten sections. These discuss anatomy and physiology, methods of investigation, symptoms associated with diseases of the genital organs, uterine displacements, infections of the generative system, lesions of the vulva, vagina, uterus, ovary and Fallopian tubes, extrauterine pregnancy, urinary disorders, chronic ill-health in women from the psychological aspect, gynaecological surgery. A short account is given of the two principal methods of applying radium in the treatment of cancer of the *cervix uteri* used at Stockholm and at Paris.

In this edition there has been a complete revision of the section dealing with the functions of the ovary and other endocrines and their relation to menstruation and its disorders. This has been very fully dealt with and brought up to date. The chapter on chronic ill-health in women from the psychological aspect contains much excellent advice and is well worth careful study.

The whole book is written in a clear and concise manner and gives an admirable account of British gynaecological thought; it can be regarded as a valuable contribution to the literature.

OBSTETRICS AS A PART OF MEDICINE.

"OBSTETRIC MEDICINE", edited by Fred L. Adair and Edward J. Stieglitz, deals with the diagnosis and management of the common diseases in relation to pregnancy.¹

The book is a large one of over seven hundred pages and is divided into twelve sections. In Section I, after some preliminary remarks outlining the scope of the work, the authors go on to describe the physiology of normal pregnancy, physical diagnosis, pharmacology and foetal disorders. Section II deals with the specific infectious diseases, tuberculosis, syphilis, contagious diseases, tropical diseases and parasitic diseases. Section III is concerned with non-infectious diseases, the industrial poisonings, deficiency diseases, allergic diseases, drug habits. Section IV deals with disorders of the nervous system. Then follow sections on disorders of the respiratory tract, the circulatory system, alimentary tract, urinary system, disorders of endocrine balance, disorders of the blood, disorders of body mechanics, and disorders of the cutaneous system.

There are thirty-nine contributors to this work, and they were invited to express their own personal ideas based upon experience. Naturally, therefore, some differences of opinion have been expressed.

The two main questions which have been kept in view all through the work are: (i) What effect does the pregnancy have upon the disease, and (ii) what does the disease do to the gestation? As well as considering the effect upon the mother, the authors discuss the effect upon the foetus.

The appropriate obstetric manipulations in any emergency do not come into the picture at all. They can be found in the ordinary obstetric text books, but full consideration is given to the advisability or otherwise of allowing the pregnancy to continue; and the effect, favourable or unfavourable, of labour upon the various diseases is fully considered. The editors do not consider that this book is in any sense a final presentation of the subjects discussed, but rather stress that it presents material which deserves careful consideration and appreciation by the practitioners who are concerned with the problems described.

We are of the opinion that this book is a welcome addition to the obstetric literature and is of considerable value. In some quarters there is a tendency to look upon

a pregnant or parturient patient simply from the viewpoint of obstetrics *per se*. We hold that this narrow view should be combated. Obstetrics after all is only a part of medicine as a whole and, by calling attention to this fact, the authors and contributors have rendered good service to all interested in obstetrics.

The authors state that there is much that needs to be learned and discovered. It is their hope that this volume, by emphasizing the dualistic nature of these problems, may stimulate thought, investigation and cooperative effort along these lines. We hope that it may.

DISEASES OF THE TROPICS.

"TROPICAL MEDICINE", by Sir Leonard Rogers and Sir John W. D. Megaw, has reached its second edition.² The authors set out to produce a book suitable for the student and general practitioner rather than the expert in tropical medicine. Such a book must be handy in size and concise, containing adequate information on diseases that the general practitioner is likely to encounter, precise in the description of important procedures, and free of unnecessary detail. On the whole, the authors may be said to have achieved their objects.

In this book diseases are classified mainly according to their causal agencies, as far as these are known; for example, the opening section deals with febrile diseases caused by protozoa, and includes malaria, kala-azar, trypanosomiasis and amoebic hepatitis. There are two important sections in which this scheme of classification is not followed, namely: Sections VI, "Bowel Diseases with Symptoms of Dysentery and Diarrhoea", and VII, "Diseases with the Most Prominent Lesions on the Surface of the Body". This departure from the scheme means that amoebic dysentery is discussed apart from amoebic hepatitis, bacillary dysentery apart from other bacterial diseases, and oriental sore apart from other types of leishmaniasis. But no doubt objections could be found to any system of classification.

In the first edition the authors bravely refused to accept the view that the various syndromes known as beri-beri were all due to vitamin B deficiency; they recognized a deficiency beri-beri, but maintained that there was a large group in which the aetiology was doubtful. Their views have received support from the results of recent work on avitaminosis. The authors carefully point out that, whatever the cause, the established methods of treatment are adequate in most cases; the essentials are elimination of rice and the provision of a diet rich in vitamins and proteins.

The sections on febrile diseases are freely illustrated with temperature charts and diagrams. These are excellent, bringing the main features to the reader's eye in a striking manner. In the diagrammatic "Story of an Attack of Benign Tertian Malaria" the insect vector depicted is obviously not an anopheline mosquito; this might well be rectified in a book that contains no section on entomology. There is no description at all of the arthropods concerned in the transmission of disease—an omission that seems to be a fault.

Features of the book are the excellent descriptions of various diagnostic and therapeutic procedures. These are clear and not prolix; they leave the reader in no doubt as to each step he should take. There is a valuable chapter containing hints on the use of the microscope; there are few medical practitioners who would not benefit from a perusal of it.

The book is readable and lucid and singularly free of jargon; it is well printed and bound. It can be recommended to any medical practitioner desiring information on tropical diseases.

¹ "Obstetric Medicine: The Diagnosis and Management of the Common Diseases in Relation to Pregnancy", edited by F. L. Adair, M.A., M.D., F.R.C.S., and E. J. Stieglitz, M.S., M.D., F.A.C.P.; 1934. Philadelphia: Lea and Febiger. Royal 8vo., pp. 759, with illustrations. Price: \$8.00 net.

² "Tropical Medicine", by L. Rogers, K.C.S.I., C.L.E., M.D., B.S., F.R.C.P., F.R.C.S., F.R.S., and J. W. D. Megaw, K.C.I.E., B.A., M.B., Hon.D.Sc.; Second Edition; 1934. London: J. and A. Churchill. Royal 8vo., pp. 556, with two coloured plates and 82 text figures. Price: 15s. net.

The Medical Journal of Australia

SATURDAY, APRIL 20, 1935.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

A MEDICAL RESEARCH COUNCIL FOR AUSTRALIA.

POSSIBLY the most important matter considered at the recent meeting of the Federal Council was medical research. It was both fitting and proper that, in spite of the multitude of medico-political problems that usually confront it, the Federal Council should give up a great deal of its time to the purely scientific side of medicine. Most significant, moreover, is the introduction of this subject to the Council by the Acting Prime Minister of the Commonwealth. Dr. Earle Page, the Acting Prime Minister, asked the Council to receive the Director-General of Health, Commonwealth Department of Health, and the Director of the Australian Institute of Anatomy, so that it might have the opportunity of discussing certain aspects of research that might possibly be undertaken at Canberra. The Acting Prime Minister's action must be taken as indicating the sincerity of the Commonwealth Government, its realization that research is necessary, and its preparedness to do something to further research. Having taken this step, the Government will not lightly disregard the reply of the Federal Council.

In his short address to the Federal Council the Director-General of Health, Dr. J. H. L. Cumpston, as previously reported in this journal, pointed out that the Institute of Anatomy was admirably equipped for research, and emphasized the need for the prevention of duplication or overlapping of research. Sir Colin MacKenzie, the Director of the Institute of Anatomy, gave details of research that he thought might be undertaken at Canberra. The members of the Federal Council were impressed by what both Dr. Cumpston and Sir Colin MacKenzie said; they recognized that the subjects enumerated by Sir Colin MacKenzie were of great scientific importance, that many of them were subjects that could be investigated only in Australia, and that their elucidation might have the most far-reaching practical results. At the same time the Council took the wide, the statesmanlike, view and decided to urge the Commonwealth Government to proceed with the establishment of a medical research council, as recommended by the Royal Commission of Health in 1925.

If the Federal Government were to establish a medical research council, it would make available annually a sum of money that would be administered by the Council. The Royal Commission on Health thought that this sum should be at least £30,000 *per annum* and that the amount should be in the form of a special appropriation or endowment and not an annual grant. If an annual grant were made, it would be most likely that by its reduction owing to political considerations, research that was incomplete would have to be abandoned for the time being or discontinued altogether. A medical research council, to quote the words of the Royal Commission on Health, would control and allocate the money, provide facilities for research workers in existing laboratories or extend them where necessary, assist individuals in investigations on which they were engaged or which they proposed to carry out, coordinate the activities of research workers in different States or combine workers in teams, and advise as to directions in which research was indicated and even initiate it. Although we might point out that the Commonwealth spends a great deal of money on scientific research as applied to

industry, and does nothing comparable with this for medical research, so that disease may be prevented from arising in, or be eradicated from, the community; although we might describe this state of affairs as grossly inconsistent; there is no need to do anything of the kind. The Government, as we have stated, has raised the question; it realizes that a need exists. The question is what it is going to do. Should it decide merely to subsidize certain isolated research at Canberra, it might claim to have justified its already large expenditure on the Institute of Anatomy, but it could lay no claim to having grappled with the pressing problem of coordinated research. If, on the other hand, it carries out the recommendations of its own Royal Commission, it will show that it regards the conservation of human health and human life as being at least as important as the freedom of disease among animals and plants. It will, moreover, prevent Australian medicine from passing into a scientific backwash.

It is clear that a medical research council will need to be endowed with authority. The administration of a research council will call for tact as well as firmness. On the one hand, no research council should so shackle the worker that he would lose his individuality and be submerged in a sea of regulations and oppressive conditions. On the other hand, it would have to show discrimination and it would give grants towards the elucidation of what appeared to be the more urgent problems. A council, therefore, would need to be large enough and sufficiently representative of various interests to prevent one worker or one section of workers from imposing his or their will on the rest; it should at the same time not be so large as to be unwieldy.

Current Comment.

THERAPEUTIC ABORTION.

BEFORE the dawn of history women, it is likely, resorted to abortion. The practice was probably based upon considerations of tribal welfare and on the necessity for keeping a rough balance between

a number of hungry mouths and the available food supply. Bitter memories of previous pregnancies and childbirths may have played their part as well. Be this as it may, it is certain that in the hey-day of Greece and Rome abortion, performed for social and cosmetic reasons, was as common as it is now. The Greek physicians, to their honour, seem to have fathered the proposition that abortion is not a thing to be lightly done, but rather only when the life of the mother is endangered; but this doctrine, with its implication of pity for suffering womanhood, was not acceptable to the religious thought of mediæval times, and even today it is a matter of debate between opposing bodies of secular and clerical opinion. The fact remains, as ever, that we, as medical practitioners mindful of our oath, have no concern with the social aspects of pregnancy or abortion; our business is to protect the health, by any necessary measures, of pregnant women of every degree, whether married or single. We must believe, as a colleague of Hippocrates did, that "the fruit of conception is not to be destroyed at will because of adultery or of care for beauty, but is to be destroyed to avert danger appertaining to birth, if the womb be small and cannot subserve perfection of the fruit, or have hard swellings or cracks at its mouth, or if some similar condition prevail".

So many are the grave diseases which imperil a pregnant woman's life that physicians in all ages have found difficulty in formulating hard and fast rules relating to therapeutic abortion. Should the thing be done at all, or is the operation more perilous than the disease? How shall it be done and, if so, when? Such questions constantly arise in consultative practice, especially in that of large hospitals. Thus it is that through the years some sort of base-line, some starting point for argument and reason, has been established. In eighteenth century England the hideous perils of birth through a contracted pelvis were apprehended, and the practice of abortion was revived as a means of avoiding them. Pregnant women needing abortion owe much, too, to the writings of Macdonald (1878). From his day nothing much was added to our knowledge of the subject until the giant figure of Mackenzie appeared on the horizon. After a half century of toil he had realized the danger to both mother and child in certain diseased states of the maternal heart. Mackenzie had devoted years to the recognition of the signs which foretold disaster, and of those which caused him no anxiety. It is mainly to this physician that we owe the belief that mitral stenosis is the commonest cause of heart failure during pregnancy and that when the disease is progressive the pregnancy should be terminated. The same dictum applies to pregnancies complicated by established auricular fibrillation or aortic regurgitation. Another cardiologist, Crighton Bramwell, regards pregnancy as a nicely graded exercise-tolerance test. He carefully evaluates the pregnant woman's reactions to effort, comparing them with her response to the demands made upon

her strength and circulatory system before pregnancy occurred. As the result of investigations carried out with Norah Regan, Bramwell considers that the outlook in cases of pregnancy complicated by heart disease is not nearly so black as many imagine. Amongst 82 patients, none with aortic lesions died, and in two only of these was the cardiac disability aggravated by the pregnancy. Bramwell expected the worst to happen amongst any one of 13 patients suffering from heart failure, dyspnoea and auricular fibrillation. In eight of these his fears were well grounded, but in no others was there evidence that their condition had been aggravated. In Bramwell's view valvular lesions are useless as prognostic guides, and so, he thinks, is cardiac enlargement. This authority therefore forbids (or recommends the termination of) pregnancy in all cases of established auricular fibrillation and in all women who have suffered from congestive heart failure in the past. He lays emphasis, however, upon the necessity for complete rest and medical supervision before any operative interference is undertaken. If possible, he thinks it is desirable to terminate pregnancy before the end of the third month. Patients seen in a later stage should be completely rested until the time is ripe for the delivery of a viable child by Cæsarean section.

An important contribution to the topic of therapeutic abortion has appeared in the pages of an American journal. In opening the symposium, H. E. B. Pardee¹ inquires into the effects of infective endocarditis upon mother and child. He expresses the sound view that since the disease is almost invariably fatal to the patient afflicted by it and that since it shows an astonishingly low fetal death rate, it can by no means be considered as an indication to empty the uterus. This writer, in establishing a basis of treatment, draws the picture of the pregnant woman whose activities are so curtailed, by reason of dyspnoea, palpitation and tachycardia, that she cannot perform or complete the simplest test exercise. Such a woman, says Pardee (and all must agree), should abort, if her condition be not improved, in the first three months of pregnancy. And there are patients in more evil case who cannot rise from bed or walk two steps without distress. For such the only recipe is prolonged rest in bed before any subsequent surgical treatment is even considered. A review of the mass of American and English opinion leads us to infer that in cases of pregnancy complicated by heart disease, those women who are victims of auricular fibrillation or of certain congenital cardiac lesions run the gravest risks.

No clinician doubts that expectant mothers who suffer from a preexisting nephritis often flirt with death. Anæmic, oedematous and prone to uræmic attacks, their course is down hill, and fetal death is sure unless abortion be procured; and repeated

pregnancies, if the fatal end is to be delayed, must be avoided. For the huge army of sufferers from the so-called toxæmias of pregnancy the outlook is brighter, for in them albuminuria is not constantly present, and nitrogen retention and uremia do not occur. Amongst these patients an induction, says W. W. Herrick,¹ is usually unwise. The foetus may die in any event, with an immediate ending of the toxic symptoms, and 15% of the mothers die as well; but it is imperative in the survivors to shun all further chances of pregnancy. In due course, if pregnancies are continued, cardio-vascular disease will be the lot of the eclamptic woman.

So far as the tuberculosis-pregnancy problem is concerned, nothing is more certain than that if the disease is active in the lungs pregnancy should be terminated before the third month. Various English and Australian clinicians have established this counsel of safety, and F. M. Pottenger¹ agrees with it. After the lapse of the third month of pregnancy, however, the outlook is altered. Intervention often causes a blazing spread of the disease and the patient is best served by allowing her to progress towards full term, when Cæsarean section or a skilful obstetrician may save her. In all consumptives, whether the disease be arrested or not, multiple pregnancies are to be deplored.

Finally, what should be our attitude towards the problem of therapeutic abortion in cases of mental disorder? If modern opinion may be trusted, there is but one answer: abortion is not indicated for the relief of any neurological or psychiatric disease. This statement may appear subversive to enthusiastic eugenists, but many alienists (C. O. Cheney¹ amongst them) have done much to establish its validity.

The subject of abortion is worthy of abstract thought. At no point do the principles of medical ethics and the demands of modern society conflict more bitterly than here. The honest medical practitioner can safeguard his conscience and the welfare of his patient only by considering the matter in a disinterested and strictly professional manner.

STAPHYLOCOCCAL TOXOID.

MUCH suffering and incapacity and even death may result from staphylococcal infections. A multitude of remedies has been used for these infections, such as yeast, colloidal manganese, tin oxide, arsenic and vaccines. All have proved disappointing. For the past two years staphylococcal toxoids have been employed in Canada with some success. D. S. Murray and C. E. Dolman have given their experiences with the use of such toxoids.² Murray states that the demonstration of the production of potent toxins by strains of staphylococci has altered

¹ *Journal of the American Medical Association*, December 22, 1935.

² *The Lancet*, February 9, 1935.

the conception of staphylococcal infections. The finding of antitoxin in the serum of man and animals has suggested a new line of treatment. Antitoxin has been of benefit in staphylococcal pyæmia. P. N. Panton and F. C. O. Valentine suggested formalized toxin (toxoid) in treating chronic staphylococcal infections. Murray reports on 116 patients, aged from six weeks to eighty-two years, thus treated. He states that in normal blood there may be some circulating staphylococcus antitoxin (antihæmolyisin). The amount of this "natural" antitoxin varies greatly. In 100 new-born infants and pregnant women the average was 0.765 international unit. Various writers give differing figures for the amount of antitoxin produced by the human body in disease, but it is generally agreed that only in osteomyelitis is the amount much increased. In most superficial infections the natural variation in antitoxic titres is of small range. The amount of circulating staphylococcus antitoxin is not markedly different in "normals" and in those with chronic superficial lesions, such as furunculosis. In acne, blepharitis, furunculosis and carbuncles the range was from 0.60 (carbuncles) to 1.03 units per cubic centimetre, with an average of 0.96. In osteomyelitis it was 11.7. Murray thinks that possibly antitoxin estimation may be of use in diagnosis of bone infection where the causal organism is doubtful; but only in such cases. Apparently injection of dead staphylococci does not increase the circulating antitoxin. In such of Murray's cases as were recently treated by vaccines there was no significant change in the anti-hæmolyisin titres. But it has been shown that injections of toxoid do increase the circulating antitoxin. In chronic untreated cases a value above two is exceptional; in treated cases a lower value is unusual. With four doses of toxoid it was possible to obtain an average increase of staphylococcal antitoxin of about eight times the initial value. But continued injection of toxoid does not necessarily produce a continuous increase of antitoxin. There seems to be a limit beyond which antitoxin production cannot be forced.

The conditions treated by Murray included acne, blepharitis, furuncles and carbuncles. Practically all were very chronic and other treatments had been unsuccessfully used. Murray is convinced that toxoid injections produced alleviation in a large proportion of the series. Acne, being due to a mixed infection, did not improve to the same extent as did pure staphylococcal infections. Of 81 cases of the various infections, 17 relapsed after one course of toxoid injections; but in none were the lesions as severe as formerly. In 32 of 38 cases a second course of toxoid was again followed by improvement. Murray claims that increase in circulating antitoxin is commonly associated with clinical improvement and might be of prognostic value. When antitoxin increased rapidly, clinical improvement was prompt. Murray aimed at reaching an increase of ten to twenty times the initial value. But this could not be achieved merely by increasing the number of injections. He found that if an increase of ten

times were attained, a very favourable prognosis might be given. The titre fell in the intervals between treatments, and the greater the fall the more prone was relapse. In some cases no improvement occurred during a first course of injections, but rapid improvement took place when injections were stopped. Murray considers that this supports the claim that a course of six doses, followed by rest, is as good as or better than a longer series of injections. Possibly in such cases a toxæmia has been produced which needs time for circulating antitoxin to overcome it.

Dolman enters into greater detail in his series of 306 cases of various forms of staphylococcal infection. Neither he nor Murray observed serious reactions following toxoid injections. Dolman concludes that potent preparations of staphylococcal toxoid are safe and efficacious antigens for treating localized staphylococcal infections. He considers that the undetermined amounts of dissolved bacterial substances in staphylococcal toxoids are unlikely to contribute materially to their therapeutic efficacy. Possibly the good results sometimes following the use of vaccines are due chiefly to toxin or toxoid present in the vaccine used. But, owing to lack of essential antigens, stock or autogenous vaccines are vastly inferior to a potent toxoid as immunizing agents. Patients with recurrent boils, unsuccessfully treated by vaccines, show titres of circulating antitoxin little, if any, above the average. In such patients toxoid injections induce increased antitoxin titres together with clinical immunity. But disappointing results occasionally follow the use of potent preparations. Pathological tissue changes in chronic osteomyelitis and nasal sinusitis and the double infection in acne prevent complete cure in spite of the high titre of circulating antitoxin. Dolman insists that the degree of acquired immunity or resistance to any specific infection should be regarded as relative and not absolute and liable to break down if contact with the causal organism be sufficiently frequent, intimate and intensive. A patient with recurrent furunculosis whose nasal mucosa carries large numbers of toxicogenic staphylococci will, in order to gain clinical immunity, need a high titre of circulating antitoxin maintained for some time. There is no definite minimum amount of antitoxin that, when retained in the blood stream, will guarantee immunity to infection. Factors influencing the duration of artificially induced immunity are the varying rates of increase or decrease in the antitoxin titre of the blood serum and the rates of acquisition or loss of antitoxin by the tissue cells. Recurrences of infection, coincident with a fall in the antitoxin titre, often follow physical or mental fatigue, insomnia or some intercurrent infection. Dolman does not believe that immunity and susceptibility to staphylococcal infection are wholly explicable in terms of serological reactions.

The contributions of Murray and Dolman are valuable and give hope for future treatment, but much is still left unexplained. It is not clear why

toxoids should evoke a greater antitoxin response than do vaccines or ordinary toxins. Another question obtruding itself is whether different strains of the various staphylococcal species are necessary in preparing the toxoids.

FACTORS INFLUENCING THE SEDIMENTATION RATE OF THE BLOOD.

AMONG the many tests introduced to help the clinician in deciding how serious is any particular patient's illness and in attempting to give a prognosis, is the sedimentation rate of the erythrocytes. It is of course recognized that the test is only a mere accessory, but it is sometimes comforting to have supporting evidence of a patient's progress. Estimation of the sedimentation rate never makes a diagnosis, nor can it be pretended to indicate in any one given case that one high or low estimation of necessity indicates a bad or good outlook; serial observations, however, may give useful guidance. As there has not been complete agreement between the various authorities who have investigated this laboratory method as to the clinical and even the chemical or physical significance of the alteration of the settling rate of the red cells, T. H. Cherry has collected the results of a long series of observations and gives his conclusions.¹

Cherry used the Friedländer method and found that estimation of the sedimentation rate in normal persons gave results consistent with the control figures of other writers. On performing the test upon the subjects of disease he found that he could divide these into a "fast" group and a "slow" group. In both groups there was an increase in the fibrin nitrogen, though the degree of increase was considerably greater in the "fast" group. This consideration led the author to try the test in cases of nephritis in which the urinary and blood protein were increased in amount. The results of a few observations were so divergent, however, that no reliance could be placed upon them in attempting an evaluation of the patient's state. It was also found that no light was shed on the general problem by studying the sedimentation rate in normal subjects who had ingested sufficient protein to raise the amount of the plasma protein. It was demonstrated that where the fibrin and euglobulin nitrogen had risen in the blood in those patients showing a considerably increased sedimentation rate, there was a fall in the albumin nitrogen. Other variations in the blood bear some relation to this rate also, for as many others have shown and as might be expected, changes in the size and concentration of the red cells affect their sedimentation rate considerably. Leucocytosis also raises the rate owing to the increase in the fibrinogen content of the blood. Cherry has carried out a number of experiments

with the washed cells of patients of one group and the plasma of others, but the results of these do not help us very much, except to show that it is the plasma which probably is of major importance in controlling the rate. The cell volume of course also plays its part, and when consideration is paid to the many permutations that must be possible between the cell and plasma variables, it will be seen that this author, coming as he does to the conclusion that it is impossible to affix definitely a standard sedimentation rate to any disease, is in accord with the general verdict on the subject. After all it is only in a few special instances that single laboratory tests have assumed an authoritative importance. Cherry has previously shown in an investigation into the value of the sedimentation rate in pelvic infections, that observations of the temperature, the leucocyte count and the clinical condition were of much greater significance.

The most important application of this test seems to be in serial observations in cases of one certain specific infection, such as acute rheumatism or tuberculosis. In the latter in particular all the help possible is to be welcomed, for it is notoriously difficult to estimate the degree of toxæmia in those patients who look well or whose condition appears to be stationary. But in these cases it is just to draw deductions only from consistent changes in the rate of sedimentation without trying to set up any false standard of normals, except within wide limits. Too much is constantly being asked of such tests; and a critical survey of this field is valuable, for it serves once again to correct errors and to prevent the formation of unbalanced judgements. There is always the danger also that over-enthusiastic advocacy may in the end cause prejudice against special methods of value. The estimation of the sedimentation rate in some respects resembles the determination of the basal metabolic rate; it must not be looked on as the ready mathematical solution of what is a very complex clinical problem, it is rather a method which, correctly applied, may give valuable information of a quantitative type that will assist in the concluding of a clinical judgement.

AVULSION OF THE OPTIC NERVE.

J. D. M. CARDELL has reported a case in which avulsion of the optic nerve occurred in a girl, aged fourteen years.¹ The eye had been knocked by a pedal cycle. Cardell commented on the slightness of the injury. Montague Hine, in discussion, drew attention to the difficulty of diagnosis. Beatson Hird reported a case in which it seemed that a clean wound had been punched out at the site of the optic nerve entrance. He had also seen a boy whose eye exhibited the late stages of avulsion of the nerve, though bruising appeared to be the only injury.

¹ *The Journal of Laboratory and Clinical Medicine*, December, 1934.

² *Proceedings of the Royal Society of Medicine*, February, 1935.

Abstracts from Current Medical Literature.

RADIOLOGY.

The Prognosis of Fractures of the Vertebrae.

E. WALTER HULL (*American Journal of Roentgenology*, November, 1934) states that healing of fractured vertebrae usually takes place with slight deformity of the body and preservation of the integrity of the intervertebral disks. Healing with increased deformity but with preservation of the cephalic disk represents the neglected case or the case treated without proper reduction. It is seldom due to too early removal of the support. Three to five months are sufficient for healing of even cancellous bone, and further fixation is injurious rather than beneficial. The so-called Kummell's disease, or rarefying osteitis, is merely due to further compression of unrecognized fractures which are improperly treated. In 23% of the author's series of cases there was formation of a bony bridge from the injured body to its cephalic neighbour. With bony ankylosis precluding motion there should be no pain at the fracture site. The spine should be even stronger, though less mobile than before the injury and, as the spine is primarily a supporting structure, this should not be a basis for disability. Even in the cervical spine, where mobility is of more importance than elsewhere, many persons have gone through life unconscious of any limitation from congenital fusion of two vertebrae. Hernia of the *nucleus pulposus* of the intervertebral disk into the injured body is considered to be of little importance, since it may be seen in patients comparatively symptom-free and without history of trauma. The question of pressure on the roots of the spinal nerves frequently arises as an eventuality of vertebral body fractures. Cord or pressure symptoms may be present early, but they will not occur as late sequelæ. In the majority of cases, namely, those with little or no vertebral deformity, no narrowing of the disks, or with fixation by bony ankylosis, the ultimate prognosis should be good both for recovery of function and freedom from symptoms. The best results are obtained by attempting complete reduction in marked hyperextension, application of a cast in this position, and institution of physical therapy and exercise. The fixation period should be limited from twelve to twenty weeks, depending on the severity of the trauma and unfavourable factors, and all supports should be eliminated on removal of the plaster. The use of a brace after the plaster is removed does the patient irreparable harm mentally and makes a chronic invalid of him. Fractures of the transverse processes are common injuries and are of minor

importance. The bone injury is secondary in importance to the soft tissue injury and the prognosis and treatment should be governed accordingly. Disability should be determined by the time necessary for the formation of fibrous tissue and should be measured in weeks rather than months. Whether the small fragments unite or not is a matter of small consequence. In cases with wide separation and therefore with only fibrous union no more symptoms occur than in those cases with merely a subperiosteal crack. The less treatment given in these cases, the better for the patient. No patient should have plaster or braces, but merely adhesive strapping, and all should return to work within three months.

The Relations of the Oesophagus.

SAMUEL BROWN AND JUSTIN E. McCARTHY (*Radiology*, February, 1935) consider the position of the oesophagus in the presence of cardiovascular diseases. In mitral valve lesions the oesophagus is displaced to the right and backward. The degree of displacement of the oesophagus to the right will help to determine to what extent the left auricle contributes to the formation of the right border of the heart. The backward displacement of the oesophagus determines the degree of enlargement of the heart in the antero-posterior diameter. In aortic valve lesions the oesophagus is displaced to the left and backward. The degree of displacement of the oesophagus to the left will help to determine the degree of displacement of the descending aorta to the left. The backward displacement of the oesophagus determines the extent of the enlargement of the heart in the antero-posterior diameter and the degree of displacement of the descending aorta to the back. In general enlargement of the heart without aortic dilatation the oesophagus is displaced to the right and backward; in general enlargement of the heart with aortic dilatation the oesophagus is displaced to the left and backward. In congenital heart disease the displacement of the oesophagus does not follow any definite rule—its position depends upon the particular defect or defects in the heart and blood vessels. The oesophagus is frequently found to be displaced to the right and backward, but seldom to the same degree as in acquired lesions. Very frequently the anterior chest wall is found to protrude forward to compensate for the enlarged size of the heart in the antero-posterior diameter. In the presence of dilatation of the aorta without cardiac enlargement the oesophagus is displaced to the left and backward only behind the great blood vessels. When the heart is also enlarged, the oesophagus is also displaced behind the heart. In the presence of aneurysms the position of the oesophagus will help to differentiate between aneurysms arising from the ascending aorta and anterior half of

the arch and those arising from the posterior portion of the arch and descending aorta. Thus backward displacement of the oesophagus will indicate the origin of the aneurysm to be the anterior portion of the aorta, while forward displacement of the oesophagus will indicate the origin of the aneurysm to be the posterior portion of the aorta. In the differential diagnosis between enlargement of the heart and pericardial effusion the determination of the position of the oesophagus will prove of great help. In enlargement of the heart as a result of dilatation or hypertrophy, or both, the oesophagus is invariably displaced backward and either to the left or right. In the presence of pericardial effusion the position of the oesophagus is almost unchanged. In the lateral position the heart shadow is seen to extend beyond the shadow of the oesophagus and often also the bodies of the vertebrae.

Pellegrini-Stieda's Disease.

MAX RITVO AND JOSEPH RESNICK (*American Journal of Roentgenology*, August, 1934) state that Pellegrini-Stieda's disease is a post-traumatic calcification of the collateral tibial ligament of the knee. The calcification manifests itself in the radiological examination as an area of density in the soft tissues overlying the medial condyle of the femur. This shadow does not become visible on the skilogram until about three weeks after the injury to the knee. Therefore this condition is frequently overlooked, and it will continue to be overlooked unless it is borne in mind in all injuries to the knee and unless repeated examinations are made. This condition may result from a severe or slight trauma. In the antero-posterior view there is a rounded semilunar-shaped area of calcification in the soft tissues overlying the internal condyle of the femur. The calcified mass lies entirely free in the soft tissues and is not connected to the bone or periosteum of the femur. This shadow is seen in the antero-posterior and oblique projections, but is usually obscured by the overlying femur in the lateral views. The treatment in the acute stages is rest and physical therapy measures, consisting of diathermy, chlorine ionization, radiant heat, massage and motion. Under this treatment all symptoms are relieved and in recent cases the calcified mass disappears.

The X Ray Appearances of Empyema and Collapsed Lung.

EPHRAIM KOROL (*American Journal of Roentgenology*, August, 1934) states that large areas of atelectasis frequently occur in chronic lung disease, producing physical and X ray signs which are indistinguishable from those given by pleural effusions. During febrile exacerbations empyema and lung abscess are often suspected, and the differential diagnosis may not be settled by exploring the chest with a needle or even by exploratory

thoracotomy. Two diagnostic procedures are recommended. In apical conditions skiagrams are made after inspiration and after deep expiration. If the abnormal shadow is cast by an accumulation of fluid, it remains unchanged in the two phases of respiration; if cast by atelectatic lung, the shadow enlarges and "brightens up" by taking in air during forced expiration. If the shadow is located at the base of the lung, a film is made with the subject lying on the better side, for comparison with the film made in the erect position. Areas of atelectasis are generally inflated in the upper part of the lung.

PHYSICAL THERAPY.

X Ray Treatment of Cervical Adenitis.

GEORGE E. PFAHLER AND PETER J. KAPO (*The American Journal of Roentgenology and Radium Therapy*, September, 1934) review 333 cases of cervical adenitis of varying degree, both acute and chronic. Forty-two per centum were recurrent after operation. Among the more common causes are tonsillo-pharyngitis, dental disease, *otitis media*, scalp eczema and pediculosis, scarlet fever, mumps, measles, diphtheria and influenza. In the treatment of chronic tuberculous adenitis radical excision is deemed obsolete because of complicating sequelæ, such as ragged scars, chronic sinuses, recurrences, nerve and muscle injuries. The authors and their surgical colleagues are convinced that Röntgen irradiation is superior to any other form of treatment in these cases. The average number of treatments is four; a kilovoltage of 130 and five milliampères of current are used at 40 centimetres distance, and with screening of six millimetres of aluminium; this gives a dose of 300 r. The dose is repeated at intervals of one to two weeks until the desired effect is obtained. Treatment is given without hospitalization. Atrophy and telangiectases do not occur. The authors also mention that old sinuses and thickened red scars can be successfully treated by electro-thermic destruction followed by one or two X ray treatments.

Primary Rectal Carcinoma under Radiation Treatment.

HARRY H. BOWING AND ROBERT E. FRICKE (*The American Journal of Roentgenology and Radium Therapy*, November, 1934) present eleven tables of statistical data, gathered from a review of 500 cases of carcinomas of anus, rectum and recto-sigmoid seen at the Mayo Clinic. Pre-operative preparation and post-operative care have influenced the surgical mortality rate favourably. The techniques of radium and X ray in the earlier cases are now obsolete, but paved the way to better results. The conclusions drawn are that surgical intervention

in cases of carcinoma of the rectum, anus and recto-sigmoid is most important, and should be the first consideration. Colostomy is a necessity in some cases. It should always be considered as a means of establishing a permanent or temporary opening. It is possible to apply adequate radiation treatment in selected cases without colostomy. An attempt should be made to estimate the grade of malignancy in each case, and then to decide on a plan of attack. Therapeutic radiology, especially radium therapy, has a distinct place in the treatment of carcinoma of the rectum, anus and recto-sigmoid. Pre-operative radium therapy should receive special consideration, and, when employed, should be followed by a period sufficiently long, probably eight to twelve weeks, before surgical intervention is attempted. Radium therapy as a palliative procedure is of value, and inoperable and recurring lesions should be given at least one well-planned treatment. The degree of palliation naturally varies, but nearly all of the patients will be benefited somewhat. Radium therapy as a post-operative measure has a limited field of usefulness; all lesions of a high grade of malignancy at least should be treated. Röntgen therapy is of value, and with the increased voltage of the present-day installations should become of greater value, especially in cases in which lesions are of the higher grade of malignancy. Since the rectal polypus may undergo carcinomatous degeneration, adequate treatment or removal of these lesions may be classed as a procedure to prevent the occurrence of carcinoma of the rectum. Owing to the advanced state of malignant involvement of the bowel in the majority of the cases, as well as the age and general physical condition of the patients and so forth, the combined efforts of surgery, therapeutic radiology and medical treatment should greatly reduce the surgical mortality rate and enhance the initial and late result.

Malignant Disease of the Thyroid Gland.

U. V. PORTMANN (*American Journal of Roentgenology and Radium Therapy*, October, 1934) states that malignant adenoma constitute 90% of all malignant lesions of the thyroid gland and that, as it is a change that goes on in a preexisting adenoma, we find adeno-carcinoma, medullary, scirrhous, papillary carcinomata or sarcoma, or a combination of any of them in these tumours. Even though the tumour is well encapsulated, metastasis readily takes place through the blood stream. These tumours are usually found in patients past middle age who have had a goitre which commences to enlarge. Occasionally we find adeno-carcinoma of the thyroid which does not arise in adenoma, but in acinar epithelium; it remains localized, is not encapsulated, does not worry the patient and is not fatal. The author then

discusses scirrhous carcinoma, papillary carcinoma, carcinoma-sarcoma, true sarcoma and metastases. Of metastases, pulmonary metastases are the most frequent, but they also occur in bones and sometimes in the soft tissues. In regard to treatment, only about 50% of cases can be diagnosed before operation, when a definite diagnosis of malignant goitre can be made. Clinically the condition is usually inoperable from the standpoint of curability. In operating on any malignant thyroide the surgeon is warned always to bear in mind the possibility of causing embolic metastases by harsh manipulation. The author had forty-eight inoperable cases of various types. Thirty-six patients have been traced and five are alive; the longest survival period was ten years. The patient received X rays following a post-operative recurrence of malignant adenoma. When a malignant adenoma is discovered at operation X ray treatment should be given, regardless of whether or not the surgeon believes he has removed the growth completely, because of the danger of invasion of the blood vessels during operation. Most of the malignant adenomata are radio-sensitive. The author states that X radiation alone is considered quite efficacious. Of seventy-eight patients with proved malignant adenoma, 32% are alive, the longest period being seventeen years, the average six years. Adeno-carcinomata not arising in adenomata are so localized and of such low grade malignancy that none of them require irradiation. The condition of seventeen patients was diagnosed and sixteen traced are well. Scirrhous carcinomata are highly radio-resistant; the prognosis is very bad. Six patients are all dead, the longest survival time after operation being six months. Technique of irradiation is fully given at the end of the article.

Multiple Myeloma.

DAVID E. EHRLICH (*Radiology*, October, 1934) states that multiple myeloma is a primary malignant tumour of the bone marrow, characterized by multiple foci, pain, spontaneous fractures, Bence-Jones albuminuria, anaemia and asthenia. It occurs chiefly in the ribs, spine, sternum and pelvis of adults. It is uncommon in occurrence, insidious in onset, difficult to diagnose, and the prognosis is hopeless. Radiographic evidence is of punched-out, rarefied areas, not confluent, varying in size, and scattered throughout the skeleton. The cortex is not destroyed, but sometimes, of course, it is expanded, with resultant fracture. History, pathology, diagnosis and seven case reports are given fully, also the difficulties that sometimes occur in differential diagnosis are emphasized. It is stated that trauma may play a rôle in onset. High voltage X ray therapy is recommended to alleviate bone pain and to retard the progressive bone destruction, but it is a temporary expedient and leaves a bad ultimate prognosis.

British Medical Association News.

ANNUAL MEETING.

The annual meeting of the New South Wales Branch of the British Medical Association was held at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney, on March 28, 1935, Dr. A. J. COLLINS, the President, in the chair.

ANNUAL REPORT OF COUNCIL.

On the motion of Dr. G. M. Barron, seconded by Dr. C. Bickerton Blackburn, the annual report of the Council was received. The report is as follows.

The Council presents the following report on the work of the Branch for the year ended March 28, 1935.

Membership.

The membership of the Branch is now 1,633, as against 1,599 at the date of the last report. The additions have included 91 elections, reelections and resumptions, and 42 removals into the area of the Branch; while the losses have included 7 by resignation, 41 removals out of the area of the Branch, 32 by default in payment of subscription, and 19 by death. At the request of members practising at Broken Hill, approval of the British Medical Association was obtained to the alteration of the Constitution of the Branch so that Broken Hill might be included in the area of the Branch. The South Australian Branch has also altered its Constitution accordingly, and the eight (8) members in question are now attached to the New South Wales Branch. The losses by death were as follows: Dr. H. W. Kendall, Dr. R. K. Lee Brown, Dr. F. W. Langton, Sir A. Jarvie Hood, Dr. T. Butler, Dr. R. S. E. Todd, Dr. John Allan, Dr. M. O'Gorman Hughes, Dr. R. T. Paton, Dr. T. A. Turner, Dr. Chisholm Ross, Dr. D. Kelly, Dr. J. Kearney, Dr. E. P. Barbour, Dr. S. S. Merrifield, Dr. Gordon Bray, Dr. W. H. O'Neill, Dr. W. O. Doyle, Dr. R. H. Fletcher.

Meetings.

Ten ordinary meetings of the Branch (including the annual general meeting), three extraordinary meetings and eight clinical meetings were held. The average attendance was 52. Seven of the ordinary meetings were held in conjunction with meetings of sections, namely: April 26, with the Section of Orthopedics, the Section of Radiology, the Section of Obstetrics and Gynaecology and the Section of Surgery; May 31, with the Section of Medicine, the Section of Surgery and the Section of Radiology; June 28, with the Section of Neurology and Psychiatry and the Section of Pediatrics; July 26, with the Section of Medicine and the Section of Pediatrics; September 27, with the Section of Surgery and the Section of Orthopedics; October 25, with the Section of Obstetrics and Gynaecology and the Section of Neurology and Psychiatry; November 29, with the Section of Medicine and the Section of Pathology and Bacteriology. The ordinary meeting of August 30 was held in conjunction with a meeting of the Australian Dental Association, New South Wales Branch. The clinical meetings were held at the Royal Alexandra Hospital for Children, the Royal Prince Alfred Hospital, the Royal North Shore Hospital, Saint Vincent's Hospital, Sydney Hospital and Renwick Hospital for Infants. The business of the meetings included fifteen papers and addresses, a lantern demonstration, numerous reports of cases, exhibits and demonstrations, and the showing of cinema films. Two of the extraordinary meetings, held on November 29, were convened for the purpose of amending the Articles and By-laws. The third extraordinary meeting, held on December 18, was called for the purpose of confirming as special resolutions the resolutions in regard to the Articles passed at the extraordinary meeting of November 29.

Representatives.

The Branch was represented as follows:

- (a) Council of the British Medical Association (1934-1935): Sir Thomas Dunhill.
- (b) Representative Body of the British Medical Association (1934-1935): Dr. F. P. Sandes.
- (c) Federal Council of the British Medical Association in Australia: Dr. J. A. Dick, C.M.G., and Dr. George Bell, O.B.E.
- (d) Executive Committee, British Medical Association Annual (1935) Meeting, Melbourne: Dr. A. A. Palmer and Dr. George Bell.
- (e) Australasian Medical Publishing Company Limited: Dr. T. W. Lipscomb, Dr. F. P. Sandes, Dr. A. M. Davidson.
- (f) Metropolitan Hospitals Contribution Fund of New South Wales: Dr. R. V. Graham.
- (g) St. John Ambulance Association: Dr. A. J. Collins.
- (h) Executive Committee of the Council for Mental Hygiene for New South Wales: Dr. C. K. Parkinson and Dr. E. H. M. Stephen.
- (i) Board of Control of the Campaign against Tuberculosis: Dr. S. A. Smith.
- (j) Council of the Royal Society for the Welfare of Mothers and Babies: Dr. R. B. Wade and Dr. E. H. M. Stephen.
- (k) Council of the Bush Nursing Association (1934-1935): Dr. A. J. Collins.
- (l) Council of Education: Dr. A. J. Collins.
- (m) Conference on Marketing of Poultry (Table Birds): Dr. W. C. Petherbridge.
- (n) Conference with Commissioner of Transport regarding Motor Vehicles (Third Party Insurance) Bill: Dr. A. J. Collins.
- (o) Fifth Australian Cancer Conference: Dr. H. M. Moran.

Council.

(a) The attendance of members of the Council and of the Standing Committees was as set out in the accompanying table.

(b) The representatives of the Local Associations of Members, appointed on the invitation of the Council to attend the regular quarterly meetings of the Council, were as follows: Dr. T. E. Parker (Canterbury-Bankstown), Dr. A. M. Gledden (City), Dr. J. M. Alcorn (Central Southern), Dr. G. N. M. Aitkens (Central Western), Dr. R. C. Traill (Eastern Suburbs), Dr. A. C. Thomas (Illawarra Suburbs), Dr. L. Cowlishaw (Kuring-gai District), Dr. A. G. Brydon (Northern District), Dr. L. Fetherston (South-Eastern), Dr. Ossian Robertson (Warringah District), Dr. Brooke Moore (Western), Dr. T. Y. Nelson (Western Suburbs).

Library.

Dr. J. A. Dick was again appointed to be Honorary Librarian, a position which he has held for twenty years. Donations of books and periodicals were received from the Australasian Medical Publishing Company, Limited, Dr. Garnet Halloran, Dr. Colin Edwards, the library of the late Dr. R. K. Lee Brown, Professor H. R. Dew and Dr. I. D. Miller, Dr. R. Worrall, Dr. W. Vickers, Dr. J. W. Harbison, Dr. J. V. Duhig, Dr. E. P. Blashki and Dr. Kenneth Smith.

A gift of two chairs for the library was made by Dr. Archie Aspinall.

Affiliated Local Associations of Members.

Balmain District (affiliated 1913).

Border (affiliated 1908): Honorary Secretary, Dr. R. Affleck Robertson. Membership, 12.

Canterbury-Bankstown (affiliated 1930): Chairman, Dr. C. G. Bayliss; Vice-Chairman, Dr. G. J. Cousins; Honorary Secretary, Dr. G. Russell. Membership, 26. Five meetings were held.

Central Northern (affiliated 1910): Chairman, Dr. A. T. Roberts; Honorary Secretary, Dr. A. C. Arnold. Membership, 69.

Central Southern (affiliated 1909): *Chairman*, Dr. F. A. Burns; *Honorary Secretary*, Dr. S. P. Lyttle. Membership, 23.

Central Western (affiliated 1910): *Chairman*, Dr. G. N. M. Aitkens; *Vice-Chairman*, Dr. J. A. Lawson; *Honorary Secretary*, Dr. K. S. Macarthur Brown. Membership, 44. Two meetings were held.

City (affiliated 1913): *Chairman*, Dr. H. A. Ridler; *Vice-Chairman*, Dr. R. F. Llewellyn; *Honorary Secretary*, Dr. L. R. Flynn. Membership, 19.

Eastern Suburbs (affiliated 1911): *Chairman*, Dr. R. C. Traill; *Honorary Secretary*, Dr. B. W. Stevenson. Membership, 92. Four meetings were held.

Illawarra Suburbs (affiliated 1913): *Chairman*, Dr. A. L. Watson; *Honorary Secretary*, Dr. P. L. Charlton. Membership, 39.

Kuring-gai District (affiliated 1929): *Chairman*, Dr. R. K. Rae; *Vice-Chairman*, Dr. H. R. Scrivener; *Honorary Secretary*, Dr. F. A. E. Lawes. Membership, 39. One meeting was held.

North-Eastern (affiliated 1913): *Chairman*, Dr. C. Bluett; *Vice-Chairman*, Dr. A. R. Lewis; *Honorary Secretary*, Dr. J. R. Ryan. Membership, 43. Three meetings were held.

Northern District (affiliated 1911): *Chairman*, Dr. R. J. Jackson; *Vice-Chairman*, Dr. W. F. L. Liggins; *Honorary Secretary*, Dr. A. G. Brydon. Membership, 61. Four meetings were held.

South-Eastern (affiliated 1914): *Chairman*, Dr. John Kerr; *Vice-Chairman*, Dr. R. D. Goldie; *Honorary Secretary*, Dr. L. Fetherston. Membership, 13. One meeting was held.

South Sydney (affiliated 1909): *Chairman*, Dr. A. I. Blue; *Vice-Chairman*, Dr. F. D. La Touche; *Honorary Secretary*, Dr. P. J. Markell. Membership, 26. Four meetings were held.

Southern District (affiliated 1909): *Honorary Secretary*, Dr. C. R. Sim. Membership, 70. One meeting was held.

Warringah District (affiliated 1929): *Honorary Secretary*, Dr. E. L. Newman.

Western (affiliated 1908): *Chairman*, Dr. R. M. Allport; *Vice-Chairman*, Dr. W. Conolly; *Honorary Secretary*, Dr. S. R. Dawes. Membership, 86. Four meetings were held.

Western Suburbs (affiliated 1908): *Chairman*, Dr. K. Smith; *Vice-Chairman*, Dr. C. E. Vickery; *Honorary Secretary*, Dr. R. F. Back. Membership, 96. Four meetings were held.

Annual Meeting of Delegates.

The twenty-second annual meeting of delegates of the affiliated Local Associations of Members with the Council was held on September 28, 1934. An account of the meeting appeared in THE MEDICAL JOURNAL OF AUSTRALIA of November 10, 1934.

Sections for the Study of Special Branches of Medical Knowledge.

Anæsthesia (inaugurated 1934): *Chairman*, Dr. W. I. T. Hotten; *Honorary Secretary*, Dr. H. J. Daly. Two meetings were held.

Genito-Urinary and Venereal Diseases (inaugurated 1928).

Hygiene and Preventive Medicine (inaugurated 1922): *Honorary Secretary*, Dr. A. H. Baldwin.

Medical Literature and History (inaugurated 1925): *Chairman*, Professor Harvey Sutton; *Honorary Secretaries*, Dr. H. M. Moran and Dr. L. Cowlishaw. Two meetings were held.

Medicine (inaugurated 1924): *Chairman*, Dr. O. A. Diethelm; *Vice-Chairmen*, Dr. Harold Ritchie, Dr. Allan S. Walker, Dr. E. H. Stokes; *Honorary Secretary*, Dr. K. B. Noad. Six meetings were held, including three in conjunction with meetings of the Branch.

Neurology and Psychiatry (inaugurated 1924): *Chairman*, Dr. W. S. Dawson; *Vice-Chairman*, Dr. H. M. North;

ATTENDANCES AT COUNCIL AND STANDING COMMITTEE MEETINGS.

	Council.	Committees.				
		Executive and Finance.	Organization and Science.	Medical Politics	Hospitals.	Ethics.
DR. G. M. BARRON..	8	—	—	—	—	5
DR. GEORGE BELL (Hon. Treasurer and Premises Attorney)	8	10	1	9	2	1
DR. C. B. BLACKBURN	6	—	—	—	—	4
DR. A. J. COLLINS (President)	10	10	2	9	3	4
*DR. A. M. DAVIDSON	10	9	—	11	—	—
DR. LINDSAY DEY	9	—	—	9	—	—
DR. J. A. DICK (Hon. Librarian)	5	8	—	6	—	—
DR. B. T. EDYE	8	—	7	—	—	1
DR. A. J. GIBSON	9	9	—	—	2	—
DR. R. V. GRAHAM	9	—	—	7	3	—
DR. A. W. HOLMES à COURT (Past President)	6	1	—	—	—	—
DR. HUGH HUNTER	9	—	—	11	—	—
DR. W. K. INGLIS	7	—	7	—	—	—
DR. C. H. E. LAWES (Hon. Secretary)	9	9	—	3	—	—
DR. R. J. MILLARD	10	—	—	—	—	2
DR. A. A. PALMER	7	—	—	—	—	5
DR. W. F. SIMMONS	9	—	—	11	3	—
*DR. KENNETH SMITH (President-Elect)	9	9	7	11	2	3
DR. E. H. M. STEPHEN	9	—	7	—	—	4
DR. W. VICKERS	10	10	—	—	3	—
Meetings held	10	12	7	12	3	5

* President-Elect: Dr. Kenneth Smith resigned February 12, 1935. Dr. A. M. Davidson appointed February 12, 1935.

Honorary Secretary, Dr. J. A. L. Wallace; *Honorary Medical Secretary*, Dr. D. W. H. Arnott. Four meetings were held, including two in conjunction with meetings of the Branch.

Obstetrics and Gynaecology (inaugurated 1925): *Chairman*, Dr. E. L. Newman; *Vice-Chairman*, Dr. R. I. Furber; *Honorary Secretary*, Dr. H. A. Ridler. Seven meetings were held, including five in conjunction with meetings of the Branch.

Orthopaedics (inaugurated 1923): *Chairman*, Dr. S. H. Scougall; *Vice-Chairman*, Dr. K. Smith; *Honorary Secretary*, Dr. McClements Callow. Three meetings were held, including two in conjunction with meetings of the Branch.

Oto-Rhino-Laryngology (inaugurated 1924): *Chairman*, Dr. Garnet Halloran; *Vice-Chairman*, Dr. H. S. Kirkland; *Honorary Secretary*, Dr. E. P. Blashki. Four meetings were held.

Pediatrics (inaugurated 1921): *Chairman*, Dr. C. L. S. Macintosh; *Honorary Secretary*, Dr. L. H. Hughes. Six meetings were held.

Pathology and Bacteriology (inaugurated 1924): *Chairman*, Dr. Oliver Latham; *Honorary Secretary*, Dr. Phyllis M. Anderson. Four meetings were held, including two in conjunction with meetings of the Branch.

Radiology (inaugurated 1926): *Chairman*, Dr. J. G. Edwards; *Honorary Secretary*, Dr. A. T. Nisbet. Five meetings were held, including two in conjunction with meetings of the Branch.

Study of Cancer (inaugurated 1928).

Surgery (inaugurated 1925): *Chairman*, Dr. John Colvin Storey; *Honorary Secretary*, Dr. C. E. Winston. Three meetings were held, including two in conjunction with meetings of the Branch.

British Medical Association Lectures.

Lectures were arranged as follows:

Central Southern Medical Association, Canberra, April 27, 1934: Dr. E. H. M. Stephen, "Some Children's Diseases and their Treatment".

North-Eastern Medical Association, Lismore, March 24, 1934: Dr. S. A. Smith, "The Modern Treatment of Pulmonary Tuberculosis".

Western Medical Association, Wellington, September 26, 1934: Dr. C. E. Corlette, "Local Anaesthesia".

Post-Graduate Study.

The New South Wales Permanent Post-Graduate Committee held its annual general revision course from May 21 to June 1, 1934. Forty-three members attended. Two lectures were given during the course by Professor F. Wood Jones.

In conjunction with the North-Eastern Medical Association, the Committee arranged a week-end course, which was held at Lismore on August 4 and 5, 1934. Thirteen members attended.

The Committee arranged also for Professor David Barr, Professor of Medicine, Washington University, St. Louis, United States of America, to deliver two lectures on August 7 and 9, 1934. Eighty-seven members attended.

A course of instruction in anatomy and physiology, suitable for the Primary Fellowship Examination of the Royal College of Surgeons of England, was arranged. The lectures and demonstrations commenced on July 23, 1934. Fifteen practitioners attended this course.

Federal Council.

The Federal Council of the British Medical Association in Australia met in Sydney on August 27 and 28, 1934, and in Melbourne on February 28 and March 1, 1935. Reports of the proceedings of the meetings appeared in THE MEDICAL JOURNAL OF AUSTRALIA of September 15, 1934, and March 23, 1935. Dr. J. G. Hunter was appointed General Secretary of the Council.

Australasian Medical Congress (British Medical Association).

The Federal Council of the British Medical Association in Australia has accepted the invitation of the South Australian Branch to hold the Fifth Session of the Australasian Medical Congress (British Medical Association) in Adelaide in 1937.

British Medical Association—One Hundred and Third Annual Meeting, Melbourne, 1935.

The one hundred and third annual meeting of the British Medical Association will be held in Melbourne, September 9 to 14, 1935.

The meeting, which will be the most important meeting of medical practitioners ever held in Australia, will be attended by many members from overseas, accompanied by their families and friends.

Arrangements are being made to entertain the visitors during their short sojourn in Sydney—September 6 and 7 and September 17 to 19.

"The Medical Journal of Australia."

The same high scientific standard of the journal has been maintained as in previous years.

It is understood that, owing to the great increase in the volume of business, it has been found necessary to extend the building and also to increase the plant and equipment of The Printing House.

Premises.

The premises revenue account discloses a net surplus of £2,857 4s. 5d. for the year ended December 31, 1934, as against a net surplus of £218 13s. 11d. for the year ended December 31, 1933, an improvement of £2,638 10s. 6d. This improvement is mainly due to the increase in rent revenue and a decrease in the amount of interest paid to the Australian Mutual Provident Society.

A comparison of the annual percentages of expenditure with revenue from the opening of the building in 1930 up to December 31, 1934, is as follows:

	Percentage of Expenses to Revenue.	Percentage of Result to Revenue.
1 year to December 31, 1930	119.4	Deficiency 19.4
1 year to December 31, 1931	114.8	14.8
1 year to December 31, 1932	109.8	9.8
1 year to December 31, 1933	97.9	Surplus 2.1
1 year to December 31, 1934	77.7	22.3

The percentages of rent revenue, expenses and surplus to the capital value of the British Medical Association House, as shown in the books, namely, £185,547, is as follows:

Rent Revenue (including amount charged for British Medical Association Branch Offices <i>et cetera</i>)	6.90%
Sundry Expenses, Interest <i>et cetera</i>	5.36%
Net Surplus of Revenue over Expenses	1.54%

Articles and By-Laws.

In pursuance of a special resolution which was passed and confirmed at extraordinary general meetings of the Branch, held on November 29, 1934, and December 18, 1934, respectively, two new Articles were constituted, namely, 59A and 59B, and amendments made to the following Articles, namely: Article 1 ("Interpretation"), Articles 6 and 7 ("Eligibility"), Article 8 ("Extraordinary Members"), Article 13 ("Termination of Membership"), Article 14 (a) ("Expulsion"), Article 23 ("Business of Annual Meeting"), Article 37 ("Composition of Council"), Article 38 ("Election of Council"), Article 40 ("Powers of Incomplete Council"), Article 46 ("Powers and Duties of Council"), Article 53 ("Officers"), Article 54 ("President, President-Elect, Past-President"), Article 59 ("Honorary Secretary").

In accordance with Article 68 of the Articles of Association, additions to and amendments of the By-Laws were made, as follows:

(i) A by-law, By-Law 24 (a), governing the reference of patients to persons other than legally qualified medical practitioners.

(ii) A by-law, By-Law 28, Federal Council of the British Medical Association in Australia, in lieu of the previously existing by-law, Federal Committee of the British Medical Association in Australia.

(iii) Amendments to By-Law 16 ("Name-plates and Lamps"), By-Law 20 ("Intraprofessional Restriction"), By-Law 26 ("Contract Attendance, Friendly Society Lodges"), By-Law 35 ("Procedure in Ethical Matters").

Workers' Compensation Act, 1926-1929.

At the invitation of the Honourable E. S. Spooner, M.L.A., Assistant Treasurer, representatives of the Council met on May 6, 1934, representatives of the Fire and Accident Underwriters' Association in regard to the question of fees payable by insurers to medical practitioners for attendance on injured workers entitled to the benefits of the *Workers' Compensation Act, 1926-1929*.

The arrangement previously existing between the Council and the Fire and Accident Underwriters' Association, that is, Schedule "D", was terminated by the insurers on December 1, 1933.

Following the conference, a subcommittee of the Council, appointed for the purpose, met representatives of the Associated Licensed Insurers, with the result that a schedule (Schedule "E") acceptable to the insurers was drawn up and approved by the Council on May 8, 1934.

A copy of the schedule was forwarded to each member of the Branch on May 28, 1934.

Friendly Society Lodge Practice.

A further conference between the Council and representatives of the Friendly Societies' Association was held on April 6, 1934, the Honourable E. S. Spooner, M.L.A., Assistant Treasurer, presiding.

The object of the conference was, as at the conference on September 4, 1933, to discuss the following proposals of the Friendly Societies' Association relating to the Common Form of Agreement:

1. The extension of the metropolitan area.
2. City rates for the city of Newcastle and suburbs and municipalities outside the districts of Sydney and suburbs and Newcastle and suburbs with a population of 7,500 and over.
3. Reduction of rates by 22½% and reduction in mileage rate.
4. Extension of services to include all minor operations and treatment where the doctor does not require the attendance of another medical officer, such as for reducing dislocations, setting fractures, arresting haemorrhage, suturing superficial wounds, opening superficial abscesses.
5. Creation of machinery to deal with major disputes between societies and medical officers.
6. The word "minimum" applying to rates to be eliminated.
7. That a common form of examination of candidates be adopted, such form to be drawn on the experience of insurance companies.

BRITISH MEDICAL ASSOCIATION—NEW SOUTH WALES BRANCH.

Balance Sheet as at December 31, 1934.

LIABILITIES.	£	s.	d.	ASSETS.	£	s.	d.
Debentures—							
268 4% Series "A", £10 each	2,680	0	0	Land and Building—B.M.A. House, 135/137, Macquarie Street	185,547	7	4
448 4·65% Series "B", £50 each	22,400	0	0	Library— Balance at 31st December, 1933	1,032	2	9
252 4·65% Series "C", £10 each	2,520	0	0	Add Additions	56	3	8
	27,600	0	0		1,088	6	5
<i>Less</i> Amount Unpaid	182	0	0	<i>Less</i> Depreciation	103	4	3
	27,418	0	0		985	2	2
Interest Accrued on Debentures				Office Furniture and Equipment— Balance at 31st December, 1933	198	4	2
Australian Mutual Provident Society	95,718	3	6	Add Additions	10	16	6
(Secured by Mortgage over Property, B.M.A. House, 135/137, Macquarie Street, Sydney.)					209	0	8
Interest Accrued	358	18	10	<i>Less</i> Depreciation	19	16	5
	96,077	2	4		189	4	3
Sundry Deposits at Call	980	0	0	Debentures in Other Companies— Australasian Medical Publishing Co., Ltd. (Face Value)..	100	0	0
Sundry Creditors	775	11	8	Sundry Debtors— Tenants' Account—Rent	1,678	10	0
Commercial Banking Company of Sydney Limited— Overdraft—Premises Account	2,158	9	11	Tenants' Account—Partitions	572	7	11
<i>Less</i> Credit Balance—Branch Account	1,348	7	9	Tenants' Account—Fixtures and Fittings	56	2	11
	810	2	2	Sundries	2	8	3
Subscriptions Paid in Advance ..					2,309	9	1
Accumulated Funds Account— Balance at 31st December, 1933	55,108	5	2	Cash on Hand	10	10	0
<i>Add</i> Surplus in Revenue Account for twelve months ended 31st December, 1934—				Prepaid Expenses	607	16	3
Branch Ac. count	£477	13	9				
Premises Ac. count	2,857	4	5				
	3,334	18	2				
	58,443	3	4				
	£189,749	9	10				

BRANCH ACCOUNT.

Income and Expenditure Account for Twelve Months ended December 31, 1934.

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
To Salaries <i>et cetera</i> —												
Medical Secretariat and Staff	1,904	3	0									
(5)												
Financial Secretariat (1)	140	0	0									
Librarian (1)	182	0	0									
				2,226	3	0						
,, Rent—Offices <i>et cetera</i>	1,000	0	0									
,, Printing and Stationery	220	0	8									
,, Stamps and Telegrams	190	2	0									
,, Telephones	48	17	4									
,, Legal Expenses	40	13	6									
,, Travelling Expenses	13	7	2									
,, Insurance	4	8	7									
,, Exchange and Bank Charges	9	7	10									
,, Refreshments—Meetings	13	10	0									
,, Newspapers	3	17	9									
,, Sundry Petty Expenses	7	8	7									
,, Federal Council	238	11	2									
,, Tea Money	12	4	0									
,, Hire of Projector and Attendant	3	10	0									
,, University Club Luncheon	4	12	6									
				1,810	11	1						
,, Depreciation—												
Library	103	4	3									
Office Furniture and Equipment	19	16	5									
				123	0	8						
,, Balance—Surplus for the twelve months ended 31st December, 1934, transferred to Accumulated Funds Account	477	13	9									
				£4,637	8	6						
												24,637 8 6

We have examined the books and vouchers of the New South Wales Branch of the British Medical Association for the twelve months ended 31st December, 1934, and we certify that in our opinion the above Balance Sheet and accompanying Income and Expenditure Account represent the true financial position of the Association at 31st December, 1934, and the transactions for the year ended that date, respectively, as shown by the books of the Association and information supplied us.

(Sgd.) GEORGE BELL, Hon. Treasurer.

(Sgd.) A. J. COLLINS, President.

(Sgd.) R. J. STIFFE, F.C.A. (Aust.), Financial Secretary.

(Sgd.) COATES, CUNNINGHAM & CO.,
Chartered Accountants (Aust.).

SYDNEY, 15th JANUARY, 1935.

8. That the contract system be restricted to registered friendly societies.

Subsequent to the conference the Council advised the Assistant Treasurer that it had decided to adhere to its previous decisions in regard to the proposals of the friendly societies, excepting in regard to mileage, the rate for which the Council agreed should be as follows:

1. Within the metropolitan area: 3/6 per mile for every mile or fraction thereof travelled beyond two miles from the medical officer's residence in the daytime, and 5/- per mile or fraction thereof travelled in the nighttime.

2. Outside the metropolitan area; the rate to remain unaltered, that is, 5/- for every mile or fraction thereof travelled beyond two miles from the medical officer's residence in the daytime and 7/6 per mile or fraction thereof travelled in the nighttime.

Medical Treatment of Unemployed.

Following representations to the Government regarding the medical care of the unemployed, the Council was advised on June 27, 1934, by the Under-Secretary, Department of Public Health, that it had been decided:

1. To pay subsidy to medical practitioners in industrial centres or other poor localities on the same basis as is provided in respect of doctors practising in sparsely scattered districts, that is, that a subsidy would be paid provided the income of the practitioner did not exceed five hundred pounds *per annum*.

2. To pay medical practitioners, ineligible for subsidy, at the rate of five shillings per visit for attendance on indigent persons, that is, persons certified by the police or office-in-charge, food relief depot, as being in absolutely

poor circumstances, who are unfit to leave their homes to visit the nearest hospital.

Subsequently the Under-Secretary advised that the scheme had been extended to include payment to medical practitioners for attention to ordinary relief workers, subject to the following conditions:

1. That no income whatever is received into the household of the applicant other than wages from ordinary relief work.

2. That the patient is unable to leave home to visit a hospital.

3. That the patient is not entitled to medical treatment through a friendly society.

Handbook for Qualified Medical Practitioners.

A handbook, containing much useful information and advice as to matters known to be often the subject of doubt or difficulty to members of the profession, has been prepared by the Council and will shortly be made available to members.

British Medical Agency of New South Wales, Limited.

Each year since the inception of the Agency in 1931 the Directors have reported substantial increases in the volume of business transacted, and the increase for the year ending June, 1934, was sufficient to enable a profit of £353 to be shown. This was more than sufficient to offset the loss incurred in the earlier years, when establishment costs were heavy in proportion to the business completed. It was estimated that the Agency would continue to show increased profits from year to year in the future.

A large percentage of members already appreciate the advantages to be secured by consulting the Agency on all matters connected with the business side of medical practice, but to those who have not yet availed themselves of its services the following information may be of interest.

The activities of the Agency include:

1. Supplying of reliable *locum tenens* and assistants.
2. Valuation, sale and purchase of medical practices and partnerships.
3. Life and endowment assurances.
4. Fire and accident insurances.
5. Duplicating and copying service.
6. Bookkeeping and accounts service.

Members are urged to consult the Agency for all matters connected with the business side of their practices.

A. J. COLLINS,
President.

FINANCIAL STATEMENTS.

Dr. George Bell moved that the statement of receipts and expenditure be received. The motion was seconded by Dr. W. Vickers and carried. The statements are published herewith. Dr. Bell also dealt with the balance sheet and financial statement of the premises account. Dr. Vickers seconded Dr. Bell's motion that the statements be received, and the motion was carried.

ELECTION OF OFFICE-BEARERS.

Dr. Collins announced that the following had been elected members of the Council for the ensuing year: Dr. G. M. Barron, Dr. George Bell, Dr. C. B. Blackburn, Dr. K. S. M. Brown, Dr. Lindsay Dey, Dr. J. Adam Dick, Dr. B. T. Edye, Dr. A. J. Gibson, Dr. R. V. Graham, Dr. Hugh Hunter, Dr. W. Keith Inglis, Dr. C. H. E. Lawes, Dr. R. J. Millard, Dr. A. A. Palmer, Dr. E. H. M. Stephen, Dr. W. Vickers, Dr. A. S. Walker, Dr. G. C. Willcocks.

Messrs. Coates, Cunningham and Company, chartered accountants, were appointed auditors for the ensuing year.

On the motion of Dr. E. H. M. Stephen, seconded by Dr. B. T. Edye, Dr. A. M. McIntosh was appointed representative and Dr. F. J. Jensen deputy representative of the Branch in the Representative Body, 1935-1936.

INCOMING PRESIDENT'S ADDRESS.

Dr. A. M. Davidson delivered his President's address (see page 479). A vote of thanks was passed to Dr. Davidson, on the motion of Dr. A. A. Palmer, seconded by Dr. Lindsay Dey.

INDUCTION OF PRESIDENT.

Dr. A. J. Collins inducted the President for the year 1935-1936 (Dr. A. M. Davidson). Dr. Davidson thanked the members for his election, and the meeting closed with a vote of thanks to the retiring President, Dr. A. J. Collins, moved by Dr. A. M. Davidson.

NOMINATIONS AND ELECTIONS.

The undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

McQueen, Ewen Neil, M.B., B.S., 1935 (Univ. Sydney), 181, Liverpool Road, Ashfield.
Ratner, John Lewis, M.B., B.S., 1931 (Univ. Sydney), 30, Camden Street, Newtown.
Wallace, Edgar Charles Moreland, M.B., B.S., 1933 (Univ. Melbourne), Royal Alexandra Hospital for Children, Camperdown.

The undermentioned has applied for reelection as a member of the New South Wales Branch of the British Medical Association:

Douglas, Clifford Norval, M.B., B.S., 1918 (Univ. Sydney), Guyra.

Correspondence.

LEUCHÆMIA OR LEUKÆMIA?

SIR: Despite the hardness of the times, I find I can raise twopence for a stamp in order to lodge a mild protest against the hideous inaccuracy of spelling leukæmia and allied words with a "ch" instead of "k". The root consists of two Greek words, λευκός (leukos) and αἷμα (haima), and the anglicized version is leukæmia. I prefer to remain anonymous, and to that end I modestly subscribe myself

Yours, etc.,

"CLASSICUS."

[The Oxford English Dictionary spells the word leuchæmia and states that it is less correctly spelt leucæmia and leukæmia. According to this authority the word is derived from the modern Latin, as if the Greek were λευχαιμία, from λευκός, white, + αἷμα, blood.—EDITOR.]

THE ANNE MACKENZIE ORATION.

SIR: I desire to correct an unfortunate error in the Anne MacKenzie Oration, published in THE MEDICAL JOURNAL OF AUSTRALIA of March 30. The magnificent gift made to the University of Sydney by the Rockefeller Foundation was £100,000 and not £50,000, as stated.

May I also correct other minor errors? In the text explaining Table VII it should be made clear that the table refers to women of thirty years and under, and not to women under thirty years of age. In Table IX the dates referring to Victoria should read 1926-1930 and not 1929-1930, as printed. Also on page 398, in describing the instruction in obstetrics at Sydney University it should be that each year 550 clinical lectures or demonstrations from the professor or his staff are given to students.

Several Edinburgh graduates have regretted that I did not in historical reference note that John William Ballantyne was the first to establish indoor treatment of an antenatal nature in hospital.

May I repair this oversight, with your permission, by quoting the following passage from "The History of the University of Edinburgh", edited by A. Logan Turner in 1933, page 144:

Another department of obstetric medicine which was initiated at Edinburgh, and which has come to occupy an important position all over the world is especially associated with the name of John William Ballantyne. This concerns the case of the expectant mother before the birth of the child, and has resulted in the wide development of antenatal clinics . . . By constantly speaking and writing on this subject he gradually impressed the medical profession with his views regarding the importance of ante-natal pathology and the necessity for ante-natal care, and he was the first physician in Great Britain to establish a clinic for ante-natal supervision of expectant mothers.

Referring to maternity clinics, he wrote:

It must never be forgotten that the chief, almost the only, purpose of these pregnancy clinics in maternity centres is to detect signs of impending danger and to prevent their maturing . . . They are as listening posts for the recognition of the slightest whisper of danger.

His advocacy of this subject was recognized when a bed for this purpose was endowed, in 1901, in the Royal Maternity Hospital.

Yours, etc.,

CONSTANCE E. D'ARCY.

233, Macquarie Street,
Sydney,
April 8, 1935.

Obituary.

FRANCIS CLIVE LANGLANDS.

WE regret to announce the death of Dr. Francis Clive Langlands, which occurred on April 4, 1935, at Toorak, Victoria.

Books Received.

RECENT ADVANCES IN NEUROLOGY, by W. R. Brain, M.A., D.M., F.R.C.P., and E. B. Strauss, M.A., D.M., M.R.C.P.; Third Edition; 1935. London: J. and A. Churchill. Demy 8vo., pp. 456, with illustrations. Price: 15s. net.

Diary for the Month.

APR. 23.—New South Wales Branch, B.M.A.: Medical Politics Committee.
 APR. 24.—New South Wales Branch, B.M.A.: Branch.
 APR. 25.—South Australian Branch, B.M.A.: Branch.
 APR. 26.—Queensland Branch, B.M.A.: Council.
 APR. 29.—Victorian Branch, B.M.A.: Council.
 MAY 1.—Western Australian Branch, B.M.A.: Council.
 MAY 2.—South Australian Branch, B.M.A.: Council.
 MAY 3.—Queensland Branch, B.M.A.: Branch.
 MAY 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.
 MAY 7.—Tasmanian Branch, B.M.A.: Council.
 MAY 10.—Queensland Branch, B.M.A.: Council.
 MAY 14.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 MAY 14.—Tasmanian Branch, B.M.A.: Branch.
 MAY 15.—Western Australian Branch, B.M.A.: Branch.

Medical Appointments.

Dr. E. F. Gartrell (B.M.A.) has been appointed Temporary Honorary Assistant Physician at the Adelaide Hospital, South Australia.

Dr. F. R. Hone (B.M.A.) has been appointed Temporary Honorary Assistant Physician at the Adelaide Hospital, South Australia.

Dr. George Muir Redshaw has been appointed Quarantine Officer under the *Quarantine Act, 1908-1924*.

Dr. M. T. Cockburn (B.M.A.) has been appointed Honorary Physician at the Mareeba Babies' Hospital, South Australia.

Dr. C. Alice Finlayson (B.M.A.) has been appointed Honorary Assistant Physician at the Mareeba Babies' Hospital, South Australia.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser", pages xvi, xvii.

ALFRED HOSPITAL, MELBOURNE, VICTORIA: Honorary Surgeon, Assistants.

CHILDREN'S HOSPITAL (INCORPORATED), PERTH, WESTERN AUSTRALIA: Junior Resident Medical Officer.

HEATHERTON SANATORIUM, CHELTENHAM, VICTORIA: Resident Medical Officer.

MOOROOPNA HOSPITAL, MOOROOPNA, VICTORIA: Junior Resident Medical Officer.

RENWICK HOSPITAL FOR INFANTS, SYDNEY, NEW SOUTH WALES: Honorary Officers.

VICTORIAN EYE AND EAR HOSPITAL, MELBOURNE, VICTORIA: Resident Surgeons, Post-Graduates.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.I.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino, Leichhardt, and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane Associate Friendly Societies' Medical Institute. Chillagoe Hospital. Members accepting LODGE appointment and those desiring to accept appointments to any COUNTRY HOSPITAL, are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	Officer of Health, District Council of Elliston. All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Editorial Notices.

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